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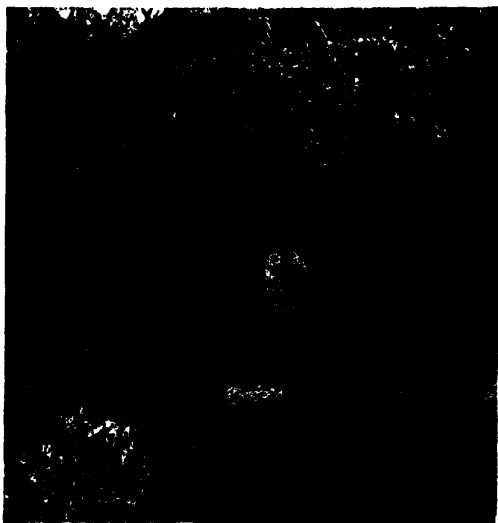
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MRS. BRIGHTWEN.

LAST HOURS WITH NATURE

BY

ELIZA BRIGHTWEN, F.Z.S., F.E.S.

Late Vice-President of the Selborne Society

EDITED BY W. H. CHESSON

ILLUSTRATED BY THEO. CARRERAS
AND THE AUTHOR

T. FISHER UNWIN

LONDON

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ADELPHI TERRACE

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Editorial Note

THE editor expresses obligation for friendly assistance to Professor G. S. Boulger, editor of *Nature Notes*, and to the late Mr. Charles Peters, editor of *The Girl's Own Paper*. The majority of the essays included in this volume appeared in the above-mentioned magazines. The illustrated diaries of 1870 and 1896 are presented as souvenirs of Mrs. Brightwen's personality. The former circulated among her friends in a manuscript volume. It has been abridged in deference to the special character of this volume. Neither of these diaries will be printed in the Memoirs entitled "The Life and Thoughts of a Naturalist."

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Last Hours with Nature

MY FIRST NATURE BOOK

IT was not until late in life that it occurred to me to put down in literary form the observations which a long devotion to nature and a humble, persevering study of it had inspired. I have always had a singular love of animals and birds, and a certain skill, I suppose, in persuading their fluttering hearts to beat less wildly in response to affection. Success in taming wild creatures arises, I believe, not so much from inborn gift as from a carefully cultivated habit of extreme gentleness and quietude. Almost every living thing will yield its affection to those who supply it with suitable food and treat it with unvarying kindness.

Desiring to secure for young people a

portion of the deep happiness which I had gained by obtaining the confidence and love of bird and beast, I began to jot down notes of my own experience, with no higher literary ambition than to be perfectly truthful in my narration. One after another desired to hear what I had seen and known; many of my friends became anxious to emulate my little victories and essay my methods. Thus by degrees the sheaf of my small chapters, the humble annals of my pets, attained the limits of a volume, and I was persuaded to make a new venture in authorship. I have already shown in the Preface to "More About Wild Nature," and I can only assert here, that no one in the world of letters was more surprised than I at the response which my modest appeal received. But I have no illusions of vanity. I know that, if my books have met with thousands of readers, their success is due to no merit of style or form in my writing, but is a consequence of a sincere appeal to that innate love of the animal world—too often, alas! obscured by ignorance—which exists in almost every human being. My chronicles of the life of birds and beasts

have had but one feature to recommend them, their absolute fidelity to fact as it has come under my own observation.

Thus I came to write my first Nature book ; and if I am to say where I wrote it, then, in a large rambling house, quite close to London, but buried in gardens and woods that themselves are surrounded by a wild and sequestered common. Under a tulip-tree upon my lawn, in the flowery meadows that descend to my little lilled lake, within a secret sanctum that the branches of my old fir-trees darken, under the yew-tree where my nuthatches flit and my squirrels chatter, in a home of deep peace, though its blue sky southward is sometimes brownish with the nearness to London, these pages were written and tremulously sent forth to a world of unknown friends.

SANCHO THE SECOND¹

SOME five or six years ago I learned that I could obtain a rather curious Italian toad which was described as being beautifully marked, of large size, and very tame.

A creature with so many attractions could not be passed by, so I became the possessor of Sancho the Second.

I am aware that comparatively few people admire reptilian pets and still fewer will keep and study them ; for, quiet and unobtrusive as these creatures usually are, they seem at once to inspire a feeling of dread and aversion.

For this reason I seldom show Sancho to visitors. He resides in a glass case in a quiet

¹ For an account of the first Sancho see "Sancho the Toad," in Mrs. Brightwen's "Wild Nature Won by Kindness."—ED.

room where I can feed him and watch his little habits without having to endure disparaging comments from the outside world.

This toad has a mottled skin, of a rich brown and grey colour ; its portly body is nearly twice as large as that of our English toad, and it differs also in having a puffy excrescence on either side of its head. Sancho is of a most placid disposition ; he likes to be stroked along his warty back, and has no objection to being lifted up and placed on the carpet for a little exercise, but much prefers a quiet stroll upon a dewy lawn in summer. Fresh air and sunlight so far excite his stolid nature that he usually sets off on these occasions for a constitutional, and would soon be lost in some thicket of evergreens if I did not keep a watch upon his movements. Every few months Sancho sheds his old skin and appears in a handsome new dress of brown and grey. The first time this event happened I thought my old friend was seized by some serious malady, and that he must be in grievous pain. He shut his eyes, while his body appeared to be alternately shrinking and swelling in an unusual manner. I could in no way diagnose his condition, and

feared he must be *in extremis*, until I noticed that his skin was cracking and peeling off in little rolls, here and there showing the brighter markings underneath.

Then I realised that he was changing his skin, and that when the operation was complete he would probably swallow the said skin as a *bonne bouche*. I did not happen to see this performance, but I suppose it took place, for I never found any trace of the shed skin.

Earthworms, flies, or mealworms form Sancho's dietary. His long tongue is darted out with marvellous swiftness, the worm disappears like magic, and often as I have watched the process of feeding I can never really see the tongue. There is a flash of something, a snap, and the worm is gone!

A year or two ago I found a companion for Sancho, a very beautiful Tasmanian golden tree-frog (*Hyla aurea*.) It is rather larger than the common tree-frog of the Riviera, and has emerald green markings on a brown ground. He was very wild when first obtained and much afraid of Sancho, but now the two have become great friends. They share the same

diet and nestle close together in perfect amity. I had little hope of ever taming the frog. When he first came into my possession he leaped about in frantic terror when any one approached; but now, after a few years' experience of gentle kindness, he has become as tame as Sancho himself and will allow himself to be stroked and carried about without any fear. This goes to prove what I always maintain, that one may tame almost every kind of creature by suitable feeding and persistent kind treatment. Some exceptions there may be, as, for instance where animals have been ill-treated in past times; it is then hard to efface the remembrance of past misery. Creatures, too, which are first caged when full grown are seldom or never so tameable as those taken in early youth.

A basin of water in Sancho's case affords a bath which is in constant use in winter and summer and supplies the moisture he needs to keep his reptilian skin moist and healthy.

Under ordinary conditions, frogs and toads hibernate in England during the cold of winter; but as there is a stove in the room where

Sancho lives which keeps the air at about an equal temperature all through the cold months, this allows my two pets to be always awake and ready for food and exercise.

OUR BADGER

A THRILL of excitement went through our household when it became known that a real live badger had arrived at my farm as a pet for the young people residing there.

As I had "declined with thanks" the offer of a young lion made to me some years ago, and also refused an African ape as not being quite suited to my possibilities of accommodation, this badger seemed the nearest approach to a wild animal that is ever likely to make its abode here. An expedition started at once to survey the new arrival.

At first, as there was no more suitable place available, the animal was placed in my granary, and there we found Nebo—as we were told she had been named—lying quietly at ease, having just enjoyed a good supper of bread and milk.

The drawing shows the handsome black and white markings of the head and neck of the animal and its long, pointed snout. The creature is heavily built and moves clumsily ; but, as we afterwards found out, it can, when it pleases, spring upon its prey with unexpected agility.

Both in its structure and habits the badger is somewhat akin to the bear, and is regarded as its English representative. I ascribed its shuffling mode of walking to its having very short legs ; but I learn that it is what is called in zoology a plantigrade—that is, an animal that treads upon the soles of its feet, after the manner of a bear.

It is a creature of surprises. For all its clumsy appearance, it contrived one day to climb a sloping pole on to the roof of the yard in which it lived ; and, had not the place been wired in above, it would no doubt have made its escape.

Then another day, whilst some dogs and ferrets were busy in an adjacent barn, four rats made their way through a hole into the badger's den. In a moment Nebo sprang upon and killed three of the rats as quickly as any terrier

could have done it, and, but for a convenient hole, the fourth rat would also have been secured. Needless to say, the unfortunate rats were quickly devoured, only the skins being left. Nebo has a strongly-marked love of



THE BADGER

company ; she will sit up against the wall of her house, looking very harmless and quiet, watching the fowls picking up the odds and ends that are to be found in the yard. Thus she will remain for a considerable time, until

the fowls stray close to her den, when she evidently enjoys making a sudden dash at them and seeing the consternation with which they rush away in all directions.

This love of society can be seen when anyone visits the badger's home. Should Nebo be asleep, a few knocks on the outside door will bring her out to interview the company; and so long as a visitor will stay, so long will the badger enjoy being noticed and talked to. The question naturally arises, Why not let her have some congenial playmate? But there are difficulties; for she might not take kindly to one of her own species, and it would not be easy to find an animal that would be proof against Nebo's powerful teeth and claws. A dog playmate would be a delight to her, as we learned in this way: A gentleman came one day to see the badger, and brought with him a little wiry-haired fox-terrier, a famous ratter. The two animals eyed each other, and trotted up and down on either side of the wire partition, trying to get at each other; and, failing this, the badger began to play like a young kitten, rolling over and over, endeavouring to coax the doggie to join in her game. Jack,



NEBO FRIGHTENING THE FOWLS.

the terrier, did not so interpret her movements ; he evidently felt they were a challenge to fight, and he began barking in reply. Instantly Nebo's aspect changed ; the hair on her body stood out and made her look twice her ordinary size. With an angry snarl she made a rush at the bars, and it would have fared ill with the terrier had she been able to lay hold of him with her formidable teeth.

Like all young animals, Nebo is distinctly mischievous ; her special bent just lately has been to tear the felt from the roof of her sleeping quarters ; she climbs up the branch of a tree which is placed in her den for her amusement, and then with teeth and claws she tears the felt to pieces, and as it is of tarry substance, Nebo somewhat soils and mars the beauty of her prettily marked face. Wire netting placed over the felt has for the present stopped these little pranks, but no doubt she will soon discover some other form of industrious mischief. A curious indication of her relation to the bear family is her frequent habit of crawling along the wirework at the top of her den, holding on by her claws exactly after the fashion of the sloth-bear. We should,

no doubt, discover many other interesting traits of character in this curious animal if it were possible to let her out for a ramble in the garden with a collar and chain, but possessing, as she does, such an uncertain temper and the power of inflicting a truly formidable bite, I fear Nebo must, for the present at any rate, remain in captivity.

A TRIO OF VOCALISTS .

IT is not often possible to study the habits of such birds as nightingales, blackcaps, and whitethroats when they are perfectly at ease and therefore free to show their natural characteristics. As it happens I can do this, since I possess a perfectly tame specimen of each of these birds. It is one of my favourite amusements to let them all three out of their cages, and whilst I am quietly writing I watch their behaviour towards each other. Lest I should be blamed for keeping such birds in captivity, I must explain how they came into my possession.

The whitethroat is my beloved Fairy, who appealed to me five years ago as a featherless orphan outside the window,¹ and, happy as a

¹ This paper appeared in *Nature Notes*, January, 1897.
See "A 'Fairy' Story" in Mrs. Brightwen's "Inmates of my House and Garden."—ED.

bird can be, he certainly would think it the height of cruelty to be turned adrift into the woods. I have learned by several rather sad experiences that to let any creature which has been long in captivity suddenly have its liberty out of doors, and so force it to find its own food, is at best a doubtful kindness and generally leads to a miserable end.

Wild birds and animals have a rare instinct for finding out an interloper, and they spend their best energies in pursuing the intruder until they have persecuted it to death. One winter I was delighted to see a ring-ousel on the lawn and hoped it would stay, but alas! the blackbirds gave it no peace; they flew at it continually and drove it from place to place, till it was compelled to seek shelter outside my domains.

Besides this bird-boycotting, there is the food difficulty. A bird that has been used to have all its wants supplied and has lived an entirely artificial life is much to be pitied when set free; for, having probably lost the appetite for its natural food, and being unable to find that to which it has become accustomed, starvation lies before it, even though the

means of living may be within its reach. This I proved in the case of my pet starling Richard the Second.¹ I had fondly hoped that, on the dewy lawns in early morning, he would find worms and grubs sufficient to satisfy his hunger during the time he was lost in the garden. When, however, I did light upon him, after his two days' absence, he was in a miserably starved condition, and was only nursed back to health with constant care and attention.

My blackcap was given to me by a lady who was no longer able to keep him. It was, when I received the bird, too late in the year to attempt to let him have his liberty, so it seemed best at any rate to keep him caged through the winter. Possibly next spring [1897], when blackcaps are arriving from abroad, it may be fitting to let him have the option of choosing a mate for himself. I shall be truly sorry to part with such a delightful inmate, but at the same time I feel that it would not be kind to retain him against his will. At present he is my daily

¹ There is a chapter on this pet in Mrs. Brightwen's "Wild Nature Won by Kindness."—ED.

companion, often out of his cage and sitting on my writing-table absolutely without fear. He is a calm, thoughtful bird, with ideas of his own, which I often notice that he carries out in a very methodical fashion.

As to the nightingale I had many scruples about accepting it, for it seems to me a cruel thing to dream of caging such a bird. I cannot learn anything about the early history of this individual nightingale, but from its extreme tameness I imagine it must have been brought up as a fledgling from the nest. I am told that it was prize-winner at the Crystal Palace bird show in the summer of 1896. The lady who possessed it was suddenly called to India, and gave the bird to a friend in town, whose cook took care of the sweet singer. From London the bird was sent to me at the beginning of winter, when to let it loose would have been certain death. I therefore keep it until next spring, when I hope it may be possible to let it go into the woods.

Thus it has come to pass that the shy English nightingale, so seldom seen except perhaps in early summer, when we may chance

to catch a glimpse of the plain brown bird which is filling the air with sweet music, perched on a spray in some woody copse, is now my intimate friend, living with me hour by hour, calmly happy and content and taking mealworms from my hand as readily as does my long domesticated whitethroat Fairy. This nightingale is my third vocalist, who sings almost throughout the year. It is now sitting on my shoulder whilst I am writing, and is crooning its exquisite little ditty into my ear as though to remind me that it, too, must not be forgotten. Never was there a sweeter bird or one more full of character. The tiny elf takes a keen interest in everything I do ; nothing escapes its keen eyes. I cannot turn my head but it must make a special chirp to call my attention and make me notice it. Brisk and alert, it seems to have nervous energy enough for half a dozen birds. Then how amusing are its little fits of temper ! It perfectly delights in maintaining a sham fight with an aggressive finger, setting up its crest, scolding and pecking with right good will, and yet it is quieted in a moment by a gentle word of affection.

As soon as these three birds are let out, their first idea is to go into each other's cages and see what delectable things are to be found there. This strikes me as very human. We are all apt to think some other lot would be better than our own, and, like my birds, a little investigation proves to us that things are, after all, very equally distributed. The blackcap and nightingale will sometimes exchange cages for a whole day, but I observe that they generally seem glad to return to their own homes again.

It would have been delightful to have kept the three birds in one cage, and I hoped they would have become friends in time and agreed to live together; but no, there is a deadly feud between the blackcap and the nightingale, while Fairy is afraid of both of them. I am curious to know when these two vocalists will begin to sing. At present (December) the blackcap only chirps, and the nightingale makes a loud noise exactly like a green tree-frog, a croak of the harshest description, only varied by an occasional clicking note. The bird is most deliberate in its ways, standing quietly

thinking for three or four minutes and then rapidly carrying out its idea either by a flight round the room or by making a sudden assault upon the blackcap. At other times it will make a tour of inspection, carefully examining every article in the room on all sides, as if it intended making an inventory of the furniture. When showing the bird to strangers I place the cage on the floor, throwing a mealworm a little distance off. Out through the open door comes the nightingale, and after a momentary pause to gaze at its audience calmly goes in search of the dainty it so dearly loves, picks it up, and returns to discuss it in the privacy of his cage. This little evolution the bird will repeat several times with much the effect of a small Jack-in-the-box.

The blackcap is still more sedate, and, once perched on a chair-rail in a quiet corner, will remain for half an hour without moving. The one thing that rouses the ire of both these birds is the arrival of a fourth personage in the shape of my tame robin. On seeing him, I am sorry to say that language of the most abusive description is

launched at him, and he warbles back notes of defiance which, though very melodious to my ears, probably embody sentiments that ought not by any means to be printed in these pages.

The nightingale is extremely like a robin, minus its red breast. It is much the same tint of rich brown on the back and head, becoming a lighter shade beneath the wings. When on the move the bird has a nervous trick of shaking its tail and body up and down somewhat after the fashion of a wagtail, and my specimen, although so tame, is yet shy, and much prefers to be in a darkened cage to remaining in the light. I could not quite believe this until I found that he invariably chose to return to his own residence (built, I imagine, specially for nightingales), with its canvas top and thick wooden bars, rather than adopt the far handsomer one I had provided for him.

I should like to give a word of counsel to bird-keepers as to affording shade to their caged pets. Any of our English warblers, accustomed as they are to the subdued light under the leafy boughs of trees, must suffer great distress when placed in the glare of

sunlight hour after hour. Canaries may not mind it so much, as they are artificially reared and more used to our home life, but I think that even they would welcome a covering over part of the cage, to afford their eyes a little respite from the bright light in which they are often placed when hanging near a window.

If my three birds remain in health until next spring, I expect to be regaled with some delightful music for a little while until I can see my way to set them at liberty. This must be prepared for by hanging the birds' cages outside the house for a week or more, possibly under the branches of a tree, until the birds have learnt the sights and sounds of out-of-door life, and in a measure learnt also the general look of the garden, so that they will not be scared when they first perch amongst the branches, and when hungry will know where to come for food and water. If after an excursion hither and thither they do return to roost in their old homes, it will prove very pleasantly that they are happy there, and one can then retain them with an easy mind.

A "FAIRY" STORY CONTINUED

SOME years ago I wrote an account, in a book called "Inmates of my House and Garden," of the habits of my tame whitethroat Fairy, and many readers were kind enough to feel an interest in such a remarkably intelligent little bird. He is still[†] alive and well, and being one of our migrants and so delicate as to be very rarely kept as a pet, I am rather proud of my success in keeping this bird in health and vigour for six and a half years. He is in lovely plumage, and as full of life and energy as ever. I used to speak of my pet as "she," but I have since learned that the possession of a pure white breast is the distinguishing mark of a male whitethroat, and, indeed, I might

[†] Mrs. Brightwen contributed this paper to *Nature Notes*, vol. x., February, 1899.—E.D.

have known by his loud, sweet singing powers that he belonged to the superior sex.

Six years' close companionship and petting have developed all Fairy's powers to a remarkable degree. By various notes and chirpings I can perfectly divine what is passing in his birdish mind, and he knows that I understand his language, and is indignant accordingly if I do not at once respond and obey his commands.

One special call-note means "I want a bath;" and if this is not attended to immediately, Fairy will try to drown himself in my water-jug—a desperate act which he well knows will bring me at once to the rescue.

This habit of hiding in some out-of-the-way corner in my room is sometimes too provoking for my patience. The breakfast gong will have sounded; I dare not leave the little scapegrace to his own devices, and yet find him I cannot! At last, after perhaps twenty minutes' search, I catch sight of the little snowy breast hiding behind an ornament on the mantelpiece, and when discovered Fairy flies straight into his cage and flirts from perch to perch, giving out his most exulting

notes to show his delight at having baffled me in my search for him.

The hours of liberty before breakfast are utilised by Fairy in picking up flies and insects of any kind, and now and then I have been rather dismayed to see either a bee or a wasp in his little beak. Naturally, I endeavour to obtain these trophies from him, fearing lest he may be stung. I might just as well try to catch a will-o'-the-wisp! With crest upraised and swiftest flight, the wicked little bird baffles all my efforts, and, perched on an inaccessible curtain-pole, will enjoy his forbidden prey.

But there is another and a very touching side to his character. I am sure the little creature knows what sympathy means. Once in early morning, I was grieving over sad tidings, when my thoughts, which were far away, were recalled by a tender little voice close to my ear. Fairy came on my finger, looked fixedly at me, and then nestled down in my hand as if he would say "I'm sorry for you, but don't forget you have still got me to care for you."

Somehow the wordless action did bring

comfort, and some wonderment too, for it really seemed almost uncanny that so minute a creature could be so human in its action.

These remarks may seem almost too trivial to record, but I think they have a certain value as proving the educating influence of human companionship in the case of a bird^{*} which seems scarcely to have ever before been observed in captivity.

As a rule I am against the caging of English song-birds. Still, if we have saved an unhappy little fledgling from a miserable death, I think Fairy's biography shows that we can make its life within a human dwelling both unusually long and unquestionably happy.

THE SORROWS OF A SON AND HEIR

I DO sincerely pity the eldest son of my pet robin, and I feel as if something ought to be done to secure for him a measure of kindness and some protection from his hard-hearted father's cruelty.

When in the early summer my robin used to come to me at all hours in the day, pleading for food for himself, his wife, and his callow brood, I never grudged him his full share of mealworms. Four or five of those appetising morsels have I seen tucked into his little bill, and I could but admire the diligence he displayed in supplying the needs of his growing family.

As time went on, I occasionally caught a glimpse of one of the brown, fluffy young robins, sitting under the shelter of some laurel

branch, remaining perfectly quiescent except for a grateful flutter of thanks now and then, when his parents brought him his ever-welcome rations.

At length the proud moment arrived when the eldest son was sufficiently grown up to be



FATHER ROBIN AND HIS SON.

introduced to me. He was brought by his father to the open window, and I could watch the parental process of feeding still going on.

Naturally, thoughts would arise about the beautiful instinct of fatherly love as shown in animals, birds, and even insects. I now regret

to think how often I praised my robin and pointed him out to admiring friends as an instance of the tender devotion of a parent to his young, and in every way held him up as an exemplary and virtuous pattern of what a bird should be.

When the moulting season arrived, my robin became less and less presentable ; his wardrobe was so scanty that at last he had but one feather in his tail, and his general aspect was moth-eaten. Under these circumstances birds usually hide themselves until their new apparel is complete, and then they emerge in all their bravery and resume their customary habits.

My robin was, however, on such familiar terms with me that he did not in the least mind my seeing him in *deshabille*, and continued to come to the window for his usual dainties throughout the moulting time.

But now begins the sad part of the story. The eldest son, hitherto the beloved of his father's heart, having donned a neat little scarlet waistcoat of his own, and become in every respect a robin to be proud of, came up to the window to receive my coveted gifts.

Whilst I was in the act of feeding him his

father appeared upon the scene, and with open beak and angry twitter flew at him and drove him out of sight. I regret to have to record this shocking barbarity, but the truth has to be told.

The feud still continues ; I can only give the heir a mealworm now and then by stealth, and even if the young bird ventures into the drawing-room the relentless parent follows and chases him round and round the room until I have to interfere in order to prevent actual murder taking place before my eyes. Two thoughts alone seem to possess the mind of Robin senior—how to supply himself with the choicest food and how to keep his offspring from participating in it. To these ends he passes his entire day in short flights to and fro, guarding the approach to my presence, and at intervals hopping on to my writing-table and gazing at me with his lustrous black eyes. Apparently he listens respectfully whilst I tell him what I think of his disgraceful conduct. He will then break out into a song which I must own is very sweet and melodious, and may contain, for aught I know, a complete justification of his daily actions ; but having no

clue to his language, I am none the wiser for his explanation.

It is no doubt wisely ordained that parental love should cease and the young birds be compelled to disperse and seek their own living, but still I must end as I began, by saying that I feel very deep compassion for Robin, junior. He will always have a warm corner in my heart and a welcome to my small gifts whenever it is in my power to circumvent his atrocious parent and secretly bestow them upon him.

A DIALOGUE BETWEEN A THRUSH AND ELIZA BRIGHT- WEN.

Thrush : Joey, Joey !

Eliza Brightwen : Well, what do you want with Joey ? You've called him often enough.

T. : Did 'e do it, did 'e do it ?

E. B. : Yes, of course he did ; I've told you so many a time.

T. : Pay your debts, pay your debts !

E. B. : How rude you are ! Of course I always pay my debts ; I pay the bills the same day that they are sent in.

T. : Spirit up, spirit up !

E. B. : For shame of you ! How can you suggest such a thing when you know we are a temperance household !

T. : Keck-d-witch, Keck-c-witch !

E. B. : I suppose you mean the Russian battleship. What do *you* know about it ?

T. : *Chur, chur, chur, turn over !*

E. B. : Well, that's what the Japs will do with it, the first opportunity they get.

T. : *Pretty Dick, pretty Dick !*

E. B. : Who is he ? Some friend of yours ?

T. : *Chee, chee, chee, tipity witchit !*

E. B. : What *are* you talking about ?

T. : *Joey, Joey !*

E. B. : Now do leave Joey in peace ; he is far too busy with his Fiscal Policy to attend to you.¹

¹ The thrush's pronunciation of the name of the Russian battleship was probably very defective. Perhaps he was trying to say Tsessarevitch, a battleship torpedoed at Port Arthur in February, 1904, and interned at Kiao Chau in August, 1904. The time will come when the ordinary reader will not feel insulted at being informed that "Joey" means the Right Hon. Joseph Chamberlain, M.P.—ED.

THE PARSEE:¹

MY TAME LOCUST²

(*Pachytylus migratorius*)

EARLY in January (1905) I received a rather unusual insect pet, a migratory locust which had been found in an Italian cauliflower. When the hamper in which it had travelled was unpacked, the locust sprang out, and by vigorous leaps hither and thither showed that

¹ Parsee, an Indian fire-worshipper.

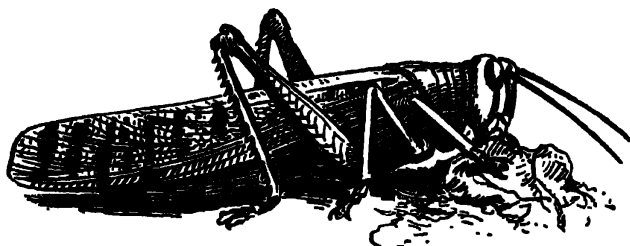
² In her interesting volume "Side Lights on the Bible" (Religious Tract Society) Mrs. Brightwen writes: "I had a tantalising experience when staying at Woodhall Spa, in Lincolnshire. Whilst strolling over some waste land, looking for wild flowers, a locust rose suddenly out of the grass close to my feet, spread its great glistening wings, and flew away in a moment quite beyond my reach. I watched its undulating flight for several hundred yds."—ED.

it was in strong and active condition. When it came into my possession, I was naturally anxious to provide it with suitable food. Succulent leaves are not very plentiful in the depth of winter, but the greenhouses yielded a fair supply of greenery, and wheat was sown in a hot-house on purpose to tempt the appetite of the interesting foreigner. Week after week passed and nothing would the locust eat, and yet it continued in excellent health. It would leap far and wide if let out of its cage. At length, on March 14th it began to nibble some lettuce-leaves, and I was able to watch the curious action of the jaws and could form some idea of the rapid way in which a swarm of these insects would devastate trees and fields of corn.

This special locust is the common species which is the plague of so many countries. It is of a sandy brown colour, with a line of scarlet on the thighs and a streak of indigo blue beneath. Its upper wings are opaque and the inner ones clear and gauzy. At first the creature was timid and leaped wildly when touched, but, after some months of captivity and kind treatment, it will bear being stroked,

and of all things it enjoys being placed in bright sunshine; in fact, it will never eat until it is basking either before the fire or in the sunlight. As it is such a determined fire-worshipper, our locust has become known in the household as "the Parsee."

In Eastern countries the locust is one of the most terrible inflictions that can pass over a



LOCUST EATING.

land. The insects swarm in countless myriads and seem to care nothing for any obstacle that the art of man can place in their way. The account given by the prophet Joel of the "great army" to be sent by Divine command as a punishment upon God's rebellious people is so true a description of the habits of the locust as it is known at the present day that it may

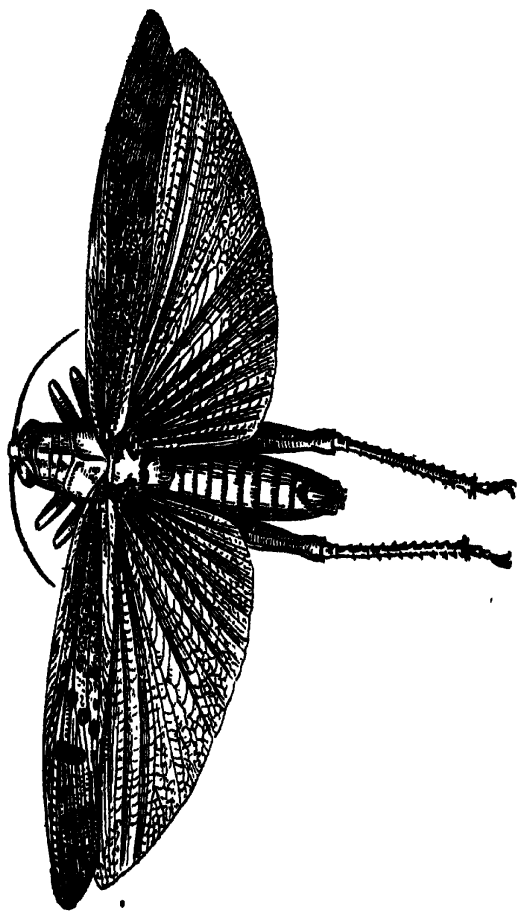
be instructive to follow out the various figures used by the prophet to convey an idea of the coming scourge. In Joel ii. 2 "a day of darkness" refers to the light being obscured by the countless hosts of locusts flying overhead. A traveller writes: "One column of these insects which appeared in India measured no less than five hundred miles in length, and was so wide that, as it passed along, it darkened the earth to such an extent that large buildings could scarcely be seen at a distance of less than two hundred yards." In 1878 the Empire of Morocco was ravaged by this plague. "The whole country was eaten up by them; immense numbers settled on the trees, clinging to one another in such swarms, like bees, that branches as thick as a man's thigh were broken. They first consumed the young and tender leaves of the palm-trees, and went on to the old and leathery stems, and finally they ate the very bark of the fig, pomegranate, orange, and other trees till not a vestige of greenness was left; the tree stems and branches were literally 'made white,' as described in Joel i. 7. Well may 'all faces gather blackness' (Joel ii. 6) when this fearful visitation is sent forth, for it

means famine and misery for many succeeding months. The green food being destroyed, the cattle perish from hunger, and the husbandman, being unable to reap what he has sown, finds himself destitute of food, cattle, and seed corn."

Dr. W. M. Thomson¹ gives a vivid description of the young of the locust. "Noticing something peculiar on the hill-side [above Fûliyeh], I rode up to examine it, when . . . the whole surface became agitated, and began to roll down the declivity. . . . The locusts were very young, not yet able even to jump; they had the shape, however, of minute grasshoppers. Their numbers seemed infinite, and in their haste to get out of my way they literally rolled over and over, like fluid mortar. Several years after that I became better acquainted with these insects in 'Abcih, on Mount Lebanon. . . . For several days previous to the first of June we had heard that thousands of young locusts were on their march up the valley towards our village. . . . Summoning all the people I could collect, we went to meet and

¹ "The Land and the Book : Central Palestine and Phœnicia" (London : T. Nelson and Sons, 1883, pp. 296 *et seq.*).

attack them, hoping . . . at least to turn aside the line of their march. I had often passed through clouds of flying locusts ; but these . . . were without wings and about the size of full-grown grasshoppers. . . . On they came like a disciplined army. We dug trenches and kindled fires, and beat and burnt to death 'heaps upon heaps,' but the effort was utterly useless. They charged up the mountain-side, and climbed over rocks, walls, ditches, and hedges, those behind covering up and passing over the masses already killed. . . . By the next morning the head of the column had reached my garden, and, hiring eight or ten people, I resolved to rescue at least my flowers and vegetables. During the day we succeeded, by fire, and by beating the locusts off the walls with bushes and branches, in keeping our little garden tolerably clear of them. . . . At length . . . I gave up the contest. Carrying the pots into the house, and covering up what else I could, I surrendered the remainder to the conquerors. For four days they continued to pass on towards the east, until finally only a few stragglers of the mighty hosts were left behind. . . . The noise made by them in marching and foraging was



LOCUST FLYING.
(*Life size.*)

like that of a heavy shower falling upon a distant forest. . . . Joel says . . . 'The flocks of sheep are made desolate.' This is poetic but true. A field over which this army of desolation has passed shows not a blade for even a goat to nip. . . . 'They shall march every one on his ways, and they shall not break their ranks' [Joel ii. 7]. When the head of the mighty column of locusts came in contact with the palace of the emir in 'Abeih, they did not take the trouble to wheel round the corners, but climbed the wall like men of war, and marched over the top of it."

Well might Pharaoh call them "this death" (Exod. x. 17), and Alexander Cruden in his quaint language define the locust as "a certain vile insect."

I have been led to insert this long quotation in order to give my readers some idea of the ravages caused by locusts in Eastern countries. It has been interesting to me to find in my tame specimen some of the characteristics described by the prophet. If the Parsee ever escapes from his cage, he need never be searched for upon the floor, for he follows the habit of his race in making his way invariably upwards.

Slowly and steadily he climbs by a curtain or window-frame, and would, if it were possible, reach the house-roof in time.

The prophet Nahum (iii. 17) speaks of "the great grasshoppers, which camp in the hedges in the cold day, but when the sun ariseth they flee away." This, again, exactly describes the habit of my locust. On a cold, dull day he is immovable, and cannot be tempted to eat, for warmth is essential to his appetite and activity.

It is difficult to feel sure whether the locusts spoken of as part of the food of John the Baptist were these insects or the fruit of the locust-tree or carob, as both are still used and eaten by the inhabitants of Palestine. In one of the Nineveh sculptures in the British Museum we may see a train of servants carrying various meats to a great feast. Among them are several men who are bearing long sticks on which are tied locusts, just as cherries are tied on a stick or onions on a string, and these are evidently dainties to appear at the banquet.

Cheering indeed must the promise in Joel ii. 25 have been to the people who had borne this terrible visitation; and may we not learn a precious lesson from it in a deeper and higher

sense? If, in the years that are past, our lives have been marred by sins permitted and indulged, so that they have yielded no fruit unto God, and the coming of "the day of the Lord" (Joel ii. 1) looms before us as "great and very terrible" (Joel ii. 11), then the remedy is shown in Joel ii. 13, 14, and gracious promises are given by Him who is mercifully willing to restore "the years that the locust hath eaten."

As the heat of summer increased my "Parsee" was inclined to use his great wings and "flee away," so that I had to be careful about open windows, or he would have made his escape and my observations would have come to an end. It was interesting to watch the locust leaping about the room. He gave a spring into the air by the action of his long hind-legs and then we caught a glimpse of the beautiful gauzy under-wings which carried him noiselessly a distance of four or five feet.

As will be seen in the drawing, the legs of the locust are furnished with small comb-like projections. These are used by the insect in its daily toilet; each leg is used in turn to brush away any speck of dust on the wing-cases; even its great brown gold-streaked eyes

are well rubbed and cleansed by each foreleg in turn. The lesson of cleanliness may thus be learned even from this lowly and much-hated insect. *

Having heard that locusts were short-lived insects, I was rather surprised to find that my specimen continued month after month in excellent health, growing quite tame and enjoying his daily repast of fresh lettuce-leaves. But a far greater surprise was in store for me! On July 21st (1905) I discovered that the locust had laid 121 eggs, and thus I learned that the "Parsee" was of the gentler sex! The eggs, which were about a quarter of an inch in length, oval-shaped and brown in colour, lay in little heaps on the floor of the cage. As I did not desire a lively family of young locusts, I arranged the eggs on cardboard as museum specimens. Speaking of this incident, to a traveller, who had just returned from Egypt, I learned from him that the Egyptian Government had found it advisable to pay the fellaheen to collect locust eggs with a view to reduce the swarms of these destructive insects and save the crops from their ravages. It gives one some idea of their amazing fecundity to learn that

just around the city of Luxor alone the quantity of eggs collected and brought in for payment amounted to nine tons.

Had these nine tons of eggs been allowed to hatch, it might have been shown that travellers do not exaggerate when they describe the branches of forest trees as being so weighted by these insects that they are bent downwards so as to seem like weeping trees. I lately came across a photograph showing exactly this effect caused by locust swarms.

My "Parsee" (as I must continue to call her) lived through the summer, autumn, and winter, carefully guarded against cold during the day and night, and then, I suppose from sheer old age, she died at the end of thirteen months' captivity. I have not as yet heard of any specimen having survived our climate for so long a period.

THE LIFE HISTORY OF BLUE-BOTTLE FLIES

(*Calliphora erythrocephala*)

ALTHOUGH we are all so familiar with the outward appearance and unwelcome presence of blue-bottle and other house-flies, I find that comparatively few people know much about their life-history.

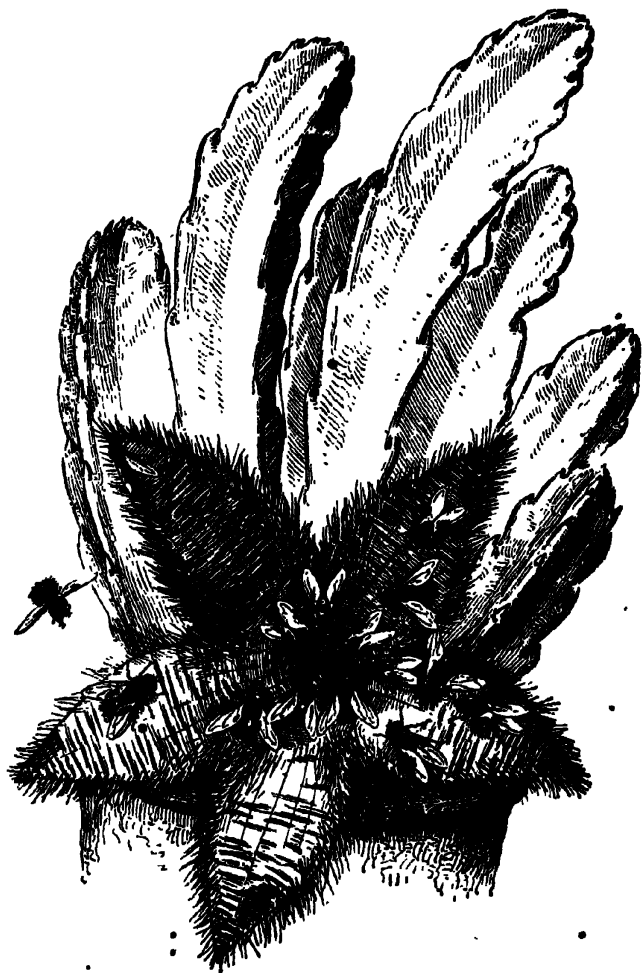
I must confess that I have hitherto deliberately ignored these insects as subjects for study, knowing their "dark past" to be connected with dead animals and birds and unsavoury meat. A rather curious circumstance has, however, led me to overcome my aversion and to try to learn a little about flies and their life-history. As some sanitary lessons may be learned from the episode I am going to relate, it may be worth while to pass these lessons

on for the benefit of others. A specimen of the curious tribe of plants known as stapelias was brought from the hot-house to my conservatory, where it was hung in its pot against a pillar; so that we could closely examine its curious furry, star-shaped flower. This plant resembles a cactus, having similar prickly, fleshy stems without leaves. The one drawback to the pretty mauve-coloured flower is its most repulsive smell, which leads one to retire to a respectful distance. This odour, however, proved to be quite entrancing to all the blue-bottle flies in the neighbourhood. They crowded on to the flower, buzzing to and fro with very evident delight. After a few hours I found that they had laid little heaps of minute white eggs in the centre of the flower, thus showing how completely the strong scent had deceived the flies into believing that the plant was putrid meat of some kind. In a few days' time the eggs hatched into small white grubs, which might be seen wandering over the petals in search of food, and, as they can only exist on a meat diet, I need hardly say they all perished. •

Nevertheless the flies continued to lay their

eggs on the deceptive flower, and I resolved to see for myself how they would develop from the egg to the perfect state. I therefore removed a little mass of these eggs, and put it in a basin with some raw meat. In a few days hatching took place, and the moving specks grew daily and rapidly into the fat white grubs called "gentles" which are used by anglers as a bait in fishing. These fly-grubs are strangely shaped, one end being very pointed and the other end rather flat, with small spiny projections. When full-grown these larvæ become inactive, and lie quietly awaiting the change which takes place, after a few days more, into an oval dark brown chrysalis. Thus they remain for a longer or shorter time according to the heat or coolness of the weather, and finally the chrysalis opens, and out comes a blue-bottle ready in its turn to seek decaying meat-refuse in which to lay its eggs and perpetuate its species. These creatures devour any kind of flesh with such wonderful rapidity that Linnæus declared that "three blue-bottles could eat up a dead ox as fast as a lion could."

- It may naturally be asked, Why should a plant have been created with such a misleading



BLUR-BOTTLES ON STAEELIA (*Carrion Flower*).

odour? The answer is very simple, since the stapelia (one of the carrion flowers) belongs to a class of plants which can only be pollinated by flies and midges, hence the appearance and scent of the flower have been made attractive to that class of insect which alone can carry out the requisite mode of fertilisation.

The larder-fly (*Sarcophaga carnaria*) is larger than the blue-bottle, being half an inch in length. It is greyer in colour, and even more prolific than the blue-bottle. Réaumur calculated the number of young produced by one of these flies to be about 20,000. We may therefore imagine how valuable such an insect is in speedily removing decaying substances which would otherwise tend to pollute the air. This larder-fly produces its young alive, and will even contrive to drop them through the meshes of a meat-cover, so that the only effectual protection for a larder is to have fly-proof windows of fine gauze.¹ The common house-fly (*Musca domestica*) goes through the same changes, but it always chooses decaying vegetables on which

¹ *Sarcophaga carnaria*, also called the grey flesh-fly, seldom enters houses, says the writer of the article on Diptera in "The Royal Natural History" (1896).—Ed.

to lay its eggs. The obvious lesson to be learned from these facts is the immense importance of clearing away all kinds of refuse from dustbins and back doors if we would reduce the number of flies which are such an annoyance in summer and autumn. Cabbage - leaves should always be burned, as they are especially selected by the house-fly as a nidus for its eggs, and servants should be instructed to place every other sort of vegetable refuse from the kitchen in a closed vessel, which should be daily cleared of its contents. If this rule were to be universally observed, there would soon be an immense diminution in the number of house-flies haunting our rooms. Careful investigations have clearly proved that flies are a frequent means of spreading many kinds of diseases, and in that fact alone we have a powerful motive for using all possible means for diminishing their numbers.

JUMPING BEANS

VISITORS to the Indian Exhibition, held at Kensington in the summer of 1895, were much amused to watch the lively movements of the so-called "jumping beans" which were to be seen at one of the stalls. Some of these beans were given me in December, 1894, and wishing to know something of their life-history, I searched through my library, but the only notice I could find was the following extract from Professor P. Martin Duncan's "Transformations (or Metamorphoses) of Insects." Speaking of certain fruit-eating moths belonging to the *Carpocapsidæ*, he says: "Some of the caterpillars of these fruit-eaters move very actively in the insides of the seeds or fruits they are devouring. M. Lucas had some large *Euphorbia* seeds, which came from Mexico, and

which, when exposed to gentle heat, jumped up a few times into the air. It was difficult to account for this, but it was found that the movements were produced by the caterpillar inside jumping about."

For many months my seeds continued their jerking movements, but at last they all became quiet and I feared the caterpillars might have died. Last week,¹ however, I was greatly pleased to find that a grey and brown moth had hatched out of one of the seeds, and of course I carefully preserved it as a museum specimen. The seed-case had a perfectly round hole bored on one side through which the chrysalis must have wriggled out, as I found the empty chrysalis outside the seed. Does the caterpillar partly bore the hole before it turns into the pupa state? I can hardly believe either the chrysalis or moth could pierce the hard-shelled seed, and yet on examining the other seeds I can see no trace of the hole through which the moth is to emerge. Since I have had to keep these beans for nearly a year before they hatched, I thought those who

¹ This note appeared in *Nature Notes*, December, 1895.—ED.

had purchased specimens at the Indian Exhibition would like to know that they must preserve them for twelve months if they wish to see the perfect insect.¹

¹ Mr. W. F. Kirby says (p. 411 of "The Butterflies and Moths of Europe," 1903), "The species of the genus *Carpocapsa*, Treitschke [classed under the heading *Tortrices* in the group called *Micro-Lepidoptera*], live in fruits and seeds, and the larvæ of *Carpocapsa Pomonella*, Linnæus, often commit great ravages in our orchards." Mr. Charles G. Barrett, in "The Lepidoptera of the British Islands" (vol. xi., 1907), says we have five species of the genus *Carpocapsa*.—ED.

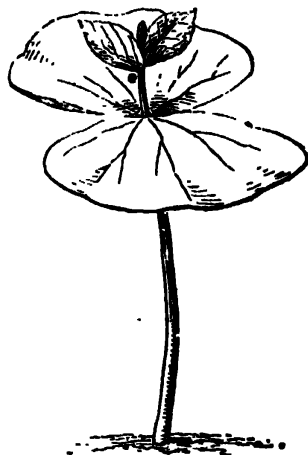
SEEDLING TREES¹

AMONGST the many interesting subjects for study which may be taken up by young people living in the country, hardly anything is more delightful than collecting and drying seedling trees. Let us go for a ramble in the woods and see what can be found in this month of July.

Under the beech-trees we shall soon light upon the beechnuts of last year, coming up through the moist, rotten soil in the form of two broad, green leaves called cotyledons. As they often retain the dry, three-cornered husk upon them for a time, we can easily see that they are young beeches, otherwise, as the first two leaves are so unlike the perfect form, it might be rather difficult to name our specimens.

¹ This article appears on pp. 143-5 of *Nature Notes*, vol. iii., 1892. Other articles by Mrs. Brightwen, entitled, "Seedling Trees" begin on p. 214 of her "Quiet Hours with Nature" (1904) and p. 77 "Rambles with Nature Students," 2nd ed. (n.d.).—Ed.

A little stalk grows up from between the cotyledons, crowned with two perfect young beech-leaves, and this is all the baby tree can do the first year. In autumn the leaves drop off, and the stem gradually becomes woody. Next



YOUNG BEECH.

spring the seedling will throw out several delicate young leaves with brown scales at their base, such as we find on the mature beech-tree ; where we find these scales, therefore, we may be quite sure we have a seedling in at least its second year. The cotyledons of the lime are

curiously notched, and so unlike the adult leaves that we shall hardly guess what they are until they are old enough to have the second pair of leaves, which are like those of the parent tree.

After some careful search and study, one may learn to recognise at a glance the seedlings of all the forest trees. We shall not find cotyledons on the young oak, horse-chestnut, or sweet-chestnut seedlings, because these normally remain below the ground, forming a store-house of nutriment for the young tree.

It is interesting to watch the growth of acorns and the two kinds of chestnuts, when placed in damp moss in a saucer. After a few weeks the plumule will be seen rising up and gradually developing into leaves, and the radicle grows into the moss and absorbs water through its numerous white rootlets. Three years ago I placed a horse-chestnut thus in moss, with a little coco-nut fibre, and kept it well watered. The first year it bore two leaves only, the next year four leaves appeared, and now it has fourteen, and is a handsome little tree eleven inches high with a woody stem.

I remember, many years ago, seeing a Scotch fir growing out of a mass of house-leek on the top of a wall ; it grew into a healthy, vigorous young tree about fourteen inches high, and in spite of its starved condition it contrived at last to bear an abundant crop of fir-cones.

A collection of seedling trees, carefully dried between sheets of blotting-paper in a press or under a weight, then fastened into a blank book with strips of gummed paper, with the English and Latin names to each, and a note of the age of the seedling, will form a pleasant memento of our forest rambles, and probably may lead on to further studies of the same kind. Lemon and orange pips will grow readily in damp moss, so that seedling trees are attainable even by those who live in towns. I was much surprised to find that tamarind stones taken out of the jam would grow very quickly in cocoanut fibre if kept moist and placed near a hall stove. The secret appears to be that though the tamarinds, which are packed in barrels, have hot sugar poured over them, the thickness of the seed-coat prevents the life-principle from being destroyed. To make the collection complete there should be

seedlings of the other great division of plants—namely the monocotyledons, or plants with one seed-leaf. A few date-stones kept in moist earth near a hall stove (if we have no greenhouse) will supply these specimens. The date-palm comes up with one long cotyledon, and out of its centre grows the second leaf, and each successive one is sheathed by its predecessor after the manner of the grasses. Indian corn or Canna seeds grown in this way will supply other examples.

In reading Canon Kingsley's delightful book "At Last" I was specially interested in his graphic description of the growth of a young coco-palm. He relates how a "little white lump," "seemingly helpless as a baby's finger," pushes its way through one of the three black marks at one end of the coco-nut and grows and hardens into what will be a stem. The roots pierce through the hard outer covering of the nut, and in time a young palm-tree is developed and feeds upon the milk and substance of the nut, much as an embryo chicken is nourished by the yolk within the egg. Now, I much desired to see this curious growth with my own eyes. I could not go

to the West Indies, as Kingsley did, and watch the baby nuts in all the stages of



YOUNG LIME.

their growth, but I thought it would be • possible to obtain a newly imported coco-nut,

which might be coaxed to grow in my warmest stove-house.

On making inquiries I found that the fruit importers often throw aside coco-nuts that are beginning to sprout as being unsaleable, they being known in the trade as "growers." This was delightful news, and before long, for a few shillings, I was able to obtain a huge nut with a promising little "baby's finger" of a shoot appearing at one end. My gardener placed the nut upright in a pot of good loamy soil, leaving the end where the shoot was three or four inches above the earth, and kept it well watered in moist heat of not less than 70° Fahr. In a few weeks the roots began to find their way through the outer husk into the soil, the shoot grew into a huge green leaf, and for eight years I watched the growth of my big child with great delight. When this palm was eight feet high it was sent to several flower shows, and gained some prizes as a well-grown specimen. The coco-palm is, I must own, a very unwieldy plant, taking up more space than can usually be spared in a greenhouse; and, sad to relate, my cherished specimen

was at last "helped not to live" by a gardener who had become heartily tired of the trouble of re-potting and tending such a huge plant.¹

¹ Cōco is popularly spelt cocoa both in the case of the nut of the coco[a]-palm and in that of the incessantly-advertised beverage made from the kernels of the chocolate-tree. The shorter spelling of coco[a]-palm is employed by Mrs. Brightwen and by Charles Kingsley in "At Last : a Christmas in the West Indies" (1871). "The little white lump" is the ovule of the coco[a]-palm ; Kingsley compares it to the stalk of a very young mushroom."—ED.

IMITATING AUTUMN LEAVES

FOR many years I have endeavoured to preserve the exquisite tints of autumn leaves, with but partial success. I have now, however, devised a plan by which their fleeting colours are so successfully imitated that my friends constantly take the painted leaf for the real one.

The materials required are but few — a common slate, some fine drawing-paper, a cyclostyle roller, and a bottle of the ink which is sold with it. A small quantity of the ink should be placed on the slate, and the roller passed to and fro until it is slightly and evenly inked. The leaf should then be placed on a flat, hard surface, and the roller passed firmly over so as to leave a little ink on the under side of the leaf to mark the veins. The leaf should then be reversed, with the ink side downwards, on a

piece of drawing-paper, and the roller firmly passed over it once only. The result will be an exquisite faint imprint of the exact shape of the leaf, with all its veins. After a few minutes it will be fit to be painted in water-colours so as exactly to resemble the various tints in the real leaf. The colours should be very moist and floated into each other, so to speak, as one can thus most readily attain the delicate gradations of tone. When finished the leaf should be neatly cut out with fine scissors, carefully retaining the notches at the edge, which vary so much in different trees and give character to each species. When such painted leaves are gummed into a blank book the effect will be found to be wonderfully real. The album should be large enough to allow of four or five leaves, each representing a different stage in the coloration—yellow, pink, crimson, and all other tints which belong to each special tree. A page should, of course, be reserved for each set of specimens, and the English and Latin name, the date, and any other particulars written at the bottom of the page will add to the scientific value of the collection.

AUTUMN LEAVES IN 1895

IN some respects this autumn has been a remarkable one in our part of the country, owing chiefly to the abnormal growth of certain plants and the absence of vivid colouring in some of the autumn leaves.

The severity of frost we experienced in the early spring nearly killed my plants of *Gunnera scabra*, so, in order to fill up vacant spaces in the bed, about a dozen young hemp-seedlings were inserted in May last.

These developed into grand specimens, measuring fully thirteen feet in height, with strong, woody stems which in due time were crowned with masses of well-ripened seed. A very pretty scene could always be witnessed by standing still for a few moments near this bed. Crowds of chaffinches, blue tits, coal tits, and greater tits hung upon every plant, shelling

out the hemp-seeds, twittering, quarrelling, flitting backwards and forwards, evidently enjoying "a real good time" whilst the provender lasted.

The Jerusalem artichoke was another plant which responded to the unusual amount of sunshine we were favoured with during this past summer. It flowered freely, and attained the height of thirteen or fourteen feet. A pomegranate growing against my house wall presented us with some brilliant scarlet flowers, and its leafage faded away into lovely tints of brown and red. Owing, I imagine, to the remarkable alternations of temperature we have had during the autumn months, and ten degrees of frost coming suddenly in the last week of October, I have observed that many trees have dropped their leaves whilst they were perfectly green. This has been the case with individual trees of horse-chestnut, mountain ash, maple, and sycamore, which are usually vivid yellow or orange.

The *Salisburia* leaves are generally of the brightest gold colour when they fall from the tree, but they have no warm colouring this year, and only form a purplish-green

carpet beneath the tree. The Catalpa is also colourless, but the tulip-tree, instead of being golden-yellow as usual, has put on an additional orange-red on the outer branches. Those who are learned on the subject will no doubt be able to explain to what atmospheric causes these variations are due.

Such observations as these greatly enliven our daily walks, and by the comparison of our personal notes with those taken by observers residing in other parts of England we may arrive at some of the mysterious laws which govern the coloration of leaves.

THE PLEASURES OF AN INDOOR WINDOW-SILL

WHEN I consider the dreary monotony of thousands who, from ill-health or other causes, are compelled to live secluded lives, possibly unable to leave their room or bed for months together, I am led to suggest to such invalids some very simple and easily attainable sources of pleasure which, in a quiet way, may tend to relieve the monotony of their lives. I do not counsel keeping birds or living creatures of any kind, as it seems cruel to condemn them to unvarying captivity in a small room. The exception is a tame canary, which can be allowed its liberty at times and whose wants can be attended to by the invalid. A dog or cat will be happy in our company if only they be allowed daily exercise and have their food supplied with regularity.

I will, however, show some of the pleasures that may be enjoyed if we have but a window-ledge and a few pots of earth. It is always interesting to watch the growth of a plant as one tender leaf after another is put forth as the result of the principle of life which is within the seemingly dead seed or nut. This growth can be watched most speedily by sowing some mustard and cress seeds on wet flannel in a saucer: the seeds begin to show signs of life in a day or two, the pale yellow first leaves unroll themselves, straighten out, and become dark green; the white rootlets find their way into the flannel and drink up the water we supply them with. These young leaves will prove most acceptable to your pet canary and form a wholesome change of diet.

Canary seed is well worth sowing in a pot of earth. It is a kind of grass, and if we can succeed in growing it to maturity we shall be rewarded by seeing its graceful pale green heads of flower, so unlike any other species of grass. Its brilliantly green foliage and flowers combined make it a charming ornament for the table. Hempseed can be grown in



CANARY GRASS (*Phalaris Canariensis.*)

a pot and will supply greenery for a time, but we may not hope to see its flower except out of doors. The hemp plants in my garden are often seven feet high, with exquisite foliage and green, inconspicuous flowers. When the seed is ripe in autumn it is the great attraction for all the titmice in the neighbourhood. There the blue tits especially rejoice and may be seen morning, noon, and evening, rifling my poor hemp bed till not a seed is left.

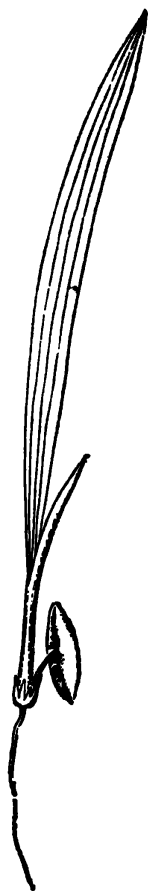
I tried growing tamarind seeds in a little pot of earth by my hall stove, and in four days they appeared on the surface. They pushed off their outer brown coats and appeared as pale yellow seed-leaves. They were most interesting, growing quickly into young plants with finely divided leaves of a delicate green colour. Tamarind plants must be kept in a warm room and now and then syringed to clear away dust from the leaves.

Nothing shows the growth of a seed better than a broad bean placed on wet flannel. The two halves of the seed, called in botany cotyledons, separate and show the plumule rising up and the radicle or root tending downwards.

The plumule is bent like a hook, so that the tender growing point may not be bruised as it passes up through the earth, but once it has reached the surface, then the plumule straightens out and the young leaves begin to open out to the light and air. If the bean is first started in a saucer and then the plant transferred when older to a pot, the whole process of seed growth can be conveniently watched.

Orange and lemon pips develop into charming little evergreen trees, and, though we cannot hope to make them flower and fruit, yet they are well worth growing, as they will live for years in small china pots and form useful table ornaments. I was rather surprised to find that even date-stones do not refuse to grow in this humble fashion. If they are placed in a pot of earth, watered, and kept as warm as may be possible by a fire or stove, we soon see a long, slender palm-leaf appearing above the soil; out of its centre a second leaf appears, and thus gradually the little tree is formed:

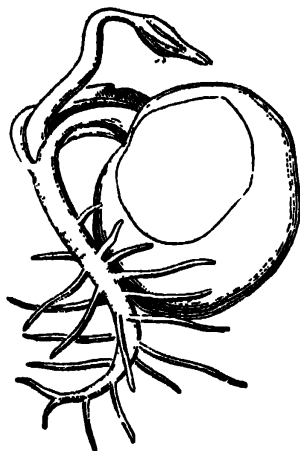
Some friends living in the country may possibly be able to supply acorns, horse-



DATE.

chestnuts, beechnuts, and sycamore seeds. All these will do well, grown in moss kept wet in a saucer.

I grew a horse-chestnut thus, and it flourished



HORSE-CHESTNUT.

and made a small amount of healthy growth. It was, of course, much dwarfed by lack of nourishment, only attaining a foot in height in the course of eight years, but each year it produced a charming crown of leaves, and

enabled me to watch how it prepared in due season its sticky-coated bud for the following year. The much-enduring nut was at length planted out in good soil, and is now a flourish-



ACORN

ing tree, about twelve feet in height. At this season (February) my lawn is thickly strewn with sycamore seeds. They have a fibrous sort of wing attached to each seed, which is caught by the wind, and thus the seeds are

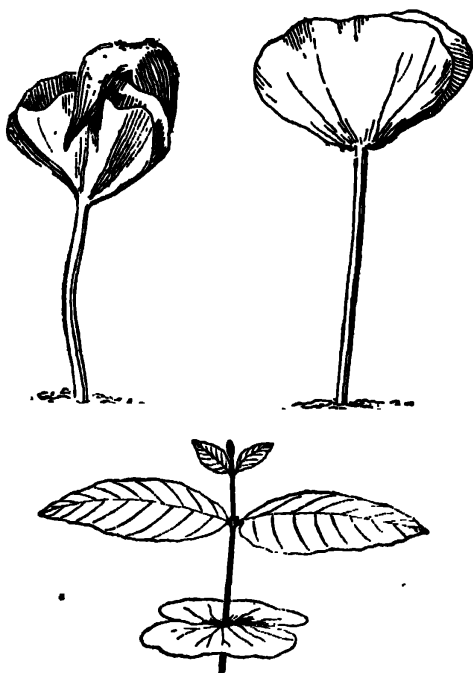
carried far away from the parent tree, and when once they fall on the lawn a small projecting spike at the base of the seed prevents their being carried farther. So the seeds remain until the first warm days in spring cause them to germinate. Their long strap-shaped cotyledons are curiously rolled up in the small seed-vessel, and with the slightest



TAMARIND SEEDLING.

warmth they uncoil rapidly and straighten up into vigorous young seedling trees. If it were not for the mowing-machine, my lawn would be turned into a sycamore forest in course of time, so thickly do these enterprising seeds spring up. Acorns can be started in wet moss, but when the growth has commenced they will do best suspended by a thread in a small clear bottle of water, with only the

roots touching the water. Thus treated they will last for several years and supply a cheering



BEECH SEEDLINGS.

little spray of fresh green oak-leaves every spring. If grown in city smoke, constant sponging of the leaves will be essential to

healthy growth, else the carbon in the air will form a deposit on the leaves which, by choking up the pores through which the plant breathes, must cause the plant to become sickly and eventually die. Beechnuts have large circular cotyledons, extremely unlike the perfect leaves, and are amongst the most interesting of the seedling trees. •

Another interesting plant to grow is the common vegetable marrow, or gourd. The seeds are easily obtainable, and develop quite readily in damp sawdust or fine earth. They germinate quickly, and the large cotyledons should be observed as they emerge from the seed-case. The growing stem produces a kind of knob which holds the seed-case firmly in the soil, and thus enables the cotyledons to release themselves from the case and gradually unfold and grow up into the light and air.

These are a few examples of what may be done in the way of growing seeds, and after a little experience doubtless many other plants may be grown to adorn our window-sill and give rise to small experiments, interesting to an invalid.

THE PLEASURES OF A HERB GARDEN

IF a kitchen garden is to be as attractive to visitors as the flower garden, care must be taken to make it as interesting as possible. The ordinary vegetable crops must not be too obtrusive. We must, of course, grow cabbages, peas, and turnips; but they should be raised in the large square beds of the garden, and considerable care should be exercised to furnish the margins of these beds with plants of a more attractive character, so that these margins are always pretty and bright, and form a foil to the more solid vegetable crops beyond.

Some of the borders should be filled with annuals that may furnish flowers for indoor decorations, others with carnations for the same purpose, and occasionally one may be planted with quaint gourds and pumpkins.

One of the most enjoyable walks in such a kitchen garden is that which is devoted to the growth of herbs. Here are planted all the old-world simples that can be obtained. "A bank of rue, sour herb of grace"; "Here's rosemary for you, that's for remembrance"; "purple-spiked lavender"; "cummin good for eyes"; "the bees on the bells of thyme"—all find their niche in the herb-border and lend their varied scents to the passing breeze. No kitchen garden would be complete without its parsley bed, and mint, thyme, and marjoram are needed for cooking purposes, but where space will permit a great variety of sweet-scented plants may also be grown so as to form some approach to the herb garden, which sounds so charming when we read of it in the old herbals of the seventeenth century.

If I venture to give a few hints about herb-growing, it will be mainly with a view to enrich small gardens with these delightful plants, as larger schemes can be aided by books upon the subject, giving all needful details.

In planting a simple straight border, it is, of course, needful to place the low-growing plants next to the path, and to graduate those

behind according to their height, in order to prevent their overshadowing the smaller herbs.

One essential to healthy growth is abundant air and sunshine; we cannot hope for success unless these can be secured; any available spot can be made suitable, whatever its shape, but it must be open to light and air.

In speaking of different herbs I will mention average height and requisite soil, and then the laying out of the herb garden must be left to individual taste, guided by the conditions of space and situation.

The smaller herbs, such as thyme, winter savory, and camomile, would grow happily in the niches of a small rockery if it is desired to vary the uniformity of a straight border. On our common—

“The mountain thyme,
Purples the hassock of the heaving mole,”

and the sight of these charming little hillocks creates a desire to remove them bodily to the herb garden. The plant adapts itself so neatly to its position wherever it may be placed, and it is so fragrant both in flower and leafage,

that we shall be tempted to allow many patches of it amongst the other herbs. Once we begin to collect and plant herbs, our interest deepens in all kinds of fragrant plants, remembering how often they are required in household economy. Tarragon, mint, and marjoram, for the kitchen, garnishing herbs for the sideboard, borage for claret-cup, sweet lavender to embalm the linen-press, and to replenish our stores of pot-pourri for the china-jars, medical herbs to be dried ready for emergencies—all these must find a place, not forgetting the stately angelica, and fennel, with its memories of the sea.

MINT.

(*Mentha viridis.*)

Perhaps with the exception of thyme and parsley, there is no herb so well known and used as much as mint. It is easily grown and should be revived each year from cuttings made in the early summer months. These soon form little plants, and the mint plot can then be planted. There are several varieties and species, and care is needed to keep the stock true.. The true or spear-mint has an

upright look about it and a habit of growth which distinguishes it from both the water mint *M. aquatica*, and the pepper mint, *M. piperita*, both of which are highly aromatic, but do not serve the same purpose as spearmint.

Height, ten to twelve inches.

PEPPERMINT.

(*Mentha piperita*.)

This deserves a place by itself. It is an old-world simple, and in gardens of bygone days was an important herb, used largely for the distillation of that old-time cordial "peppermint." Like the spear-mint it is easily grown in any soil, but to obtain it at its best cuttings should be struck in the summer and a fresh bed planted in August.

Height, one foot.

FENNEL.

(*Feniculum vulgare* or *dulce*.)

At the back of our herb border a few plants of this herb are most effective; its stately growth and finely cut foliage act as a setting to the more compact plants growing in the

front. But for its somewhat flaccid nature, the leaves would be welcome as a setting to cut flowers. Ophelia in her offering to Laertes associates fennel with columbines ("Hamlet," IV. 5), so that doubtless its delicate greenery has always been valued for its gracefulness. •

Fennel can easily be grown from seed, and should be sown where it is intended to stand.

TARRAGON.

(*Artemisia dracunculus*.)

This perennial plant is a native of Siberia, and yet, strange to say, it is liable to be injured by a severe frost, so that it is well to cut it down as winter approaches and to cover the crowns with dead leaves and mould. In spring the soil should be stirred, taking care not to injure the roots.

The sweet-scented leaves are used to flavour salads and soups. They are also pickled with gherkins, and the well-known Tarragon vinegar is made from an infusion of these aromatic leaves. The plant is propagated by cuttings, taken in July and kept under a hand glass until

rooted and ready for transplanting. Young plants can also be obtained in the spring by separating some of the creeping roots.

Tarragon may find a place towards the middle or back of the border, as it grows a foot or more in height.

Like many other plants with creeping roots, it is apt to encroach on the other herb plots, and will need, when once established, to be cut round with a spade and limited to its proper quarter.

TANSY.

(*Tanacetum vulgare.*)

If only for the beauty of its finely divided, fragrant leaves, which form charming feathery greenery all through the summer for use with cut flowers, this plant is well worth growing. In ancient cookery books one may often find a recipe for a "Tansy" or Tansy puddings.

"On *Easter-Sunday* be the Pudding seen,
To which the Tansey lends her sober Green."
("On Ben Tyrrell's Pies" in "The
Oxford Sausage.")

Tastes vary, and it may be possible that the

flavour of tansy of those bygone days was appreciated. I am indebted to a lady who had a pudding made from tansy, grown in her garden, and the result was the following note: "I do not know whether by chance the cook put in a too liberal supply of tansy or whether tastes as to flavouring vary, but anything so nauseous as that pudding I never before tasted. The bitter aromatic principle may have its use in medicine, but as an adjunct in cookery it is a decided failure."

Tansy is a strong herb, easily increased by re-planting the running roots (rhizomes) in the spring. It grows between two and three feet in height, when in good soil, and should be kept towards the back of the border, where in late summer it produces its flowers. These are somewhat like small greenish-yellow everlastings, and it is said that these last so long that the word "tansy" has been derived mainly from *athanasia*, immortality. Its habit of growth is distinctly robust and greedy, and it is well to confine its roots to a small plot hedged in with sunken slates, otherwise it will monopolise the border to the detriment of the less vigorous herbs.

THYME.

(*Thymus.*)

" I know a bank whereon the wild thyme blows."

There are nearly a dozen species of *Thymus* cultivated and known in gardens, all of them low-growing, sweet-scented plants of neat, compact habit. Two species only are grown as herbs proper, *Thymus vulgaris*, the common garden thyme, and *Thymus Serpyllum vulgaris*, the lemon thyme. Both species are used for culinary purposes and are almost indispensable to the housewife and cook. The lemon thyme is of the two the most compact grower and can be used for the front of the border ; indeed, it forms a most suitable edging if only care is taken to clip off the flower stalks after flowering, so as to prevent it from becoming untidy. It is easily propagated by division and by rooted branches. Common thyme is a somewhat loosely growing plant, a native of South Europe ; it is easily raised by cuttings or by seed. Thyme rejoices in a dry, warm soil, although it will grow in any ordinary garden

soil if only the drainage is good. A few tufts of our common field thyme or brotherwort should always be associated in the herb garden with the thyme plot, whilst both the silver variegated and the golden thyme serve to give variety and colour. •

WORMWOOD.

(*Artemisia absinthium.*)

This shrubby plant with its grey silky leaves would look well planted next to the tansy, as it grows about the same height, and the leaves would form a pleasing contrast of colour against the dark green of the tansy.

The true wormwood, of which our indigenous plant is a variety, grows abundantly in Syria and occurs seven or eight times in the Bible, generally with reference to its bitterness.

Its Hebrew name comes from a root-word signifying "to curse," and when we remember that from it the deleterious French liqueur called absinthe is made, we must, I fear, look upon it as a plant of evil repute. Still, it has good qualities and is extensively used in medicine.

"What savour is better (if physick be true),
For places infected than wormwood and rue?"
("Julies husbandrie" in "Five Hundred
Pointes of Good Husbandrie," by
Thomas Tusser.)

An infusion of the bitter leaves and tops is an old-fashioned tonic. Wormwood is widely distributed, occurring in Britain, and covers immense tracts in Southern Russia, whence it is exported for medical purposes. The drug consists of the small, dry, unopened flower-heads, which are so minute that about ninety of them weigh only one grain. The plant is hardy, it grows from seed sown in the spring, it will do well in any soil, and usually flowers in July and August.

There are two or three species in cultivation, common wormwood, *A. absinthium*, salt wormwood, *A. maritima*, both British plants, and the Roman wormwood, *A. pontica*, a native of Hungary and Austria. Another British plant often mistaken and used for wormwood is the common mugwort, *A. vulgaris*. This plant may be distinguished from the true wormwood by the erect woolly heads, which on the wormwood are drooping and silky in texture.

BASIL.

(*Ocimum.*)

“Madonna, wherefore hast thou sent to me
Sweet basil and mignonette,
Embleming love and health, which never yet
In the same wreath might be?”
 (“To Emilia Viviani,” by P. B. Shelley.)

There are two distinct species of basil in cultivation, the sweet basil, *Ocimum Basilicum*, and the bush basil, *Ocimum minimum*.¹ As the specific name implies, the bush basil is the smaller of the two species. Both have deliciously scented foliage, fragrant and as the poets assert sympathetic, so much so that Lady Rosalind Northcote tells us in her charming “Book of Herbs” that in Moldavia they say the perfume of the basil “can even stop a wandering youth upon his way and make him love the maiden from whose hand he accepts a sprig” of the herb. Unlike some of our annual herbs the basil is very tender and needs raising under glass. If sown in a pan or seed-box any time during April and thinned out when sufficiently

¹ In “A Dictionary of English Names of Plants” (1884), Mr. William Miller has 14 entries under Basil.
—ED.

large, the little plants may be placed in the herb border or garden about the middle or end of May. They delight in rich, light soil and should not be planted nearer than eight or nine inches each way. They are both East Indian plants and should be given the most sunny position available. Basil is sometimes used in salads, but the flavour is not agreeable to every one, reminding the palate of cloves ; it is more conveniently used for stews and soups. It is only in very dry and brilliant summer weather that the seed ripens.

Height, ten inches.

If space can be found in the herb border or garden, there are several annual herbs that are both curious and interesting, easily grown and not too particular as to soil. Anise (*Pimpinella anisum*) and cummin (*Cuminum cyminum*) are two that repay for a sunny corner. Borage, too, should find a place ; its bright blue flowers are very welcome in a patch of sombre herbs. Chervil is useful both as a seasoning herb and to garnish, the curled leaves in this respect resembling parsley.

Height, one to two feet,

Two pretty growing annuals are the green and golden purslanes (*Portulaca oleracea* and *P. sativa*): these require raising in heat and planting out when all danger of frost is past.

Caraway (*Carum Carui*), although strictly speaking it is a biennial, can be grown as an annual, and should be sown in late March or April. The value of the herb is the seed, the well-known caraway of our cakes, to which it imparts that peculiar flavour so appreciated even in Shakespeare's time as an adjunct to the dessert. Shallow, in the second part of "King Henry IV.," taking his visitors into the garden after dinner, says, "Nay, you shall see my orchard, where, in an arbour; we will eat a last year's pippin of my own grafting, with a dish of caraways and so forth."

Height, about eighteen inches.

Another annual, that must on no account be omitted, is sweet savory (*Satureia hortensis*), a native of Italy, sown in April in light soil and thinned to quite six inches apart. The plants soon form sturdy little bushes. These should be partly cut in the summer months and dried

for winter use. It should be grown in gardens where bees are kept, for the old herbalists looked upon it as an antidote to a bee-sting, and certainly when a shoot is rubbed on the wasp- or bee-sting it gives some relief.

Height, ten inches.

ROSEMARY.

(Rosmarinus officinalis.)

"Within an arbour, shadow'd by a vine,
Mix'd with rosemary and eglantine."

The essence of this plant was formerly supposed to have a powerful effect in stimulating the mental powers, relieving headache, and improving the memory; hence it was called "herb of memory."

Pliny mentions this plant and ascribes many virtues to it. Arabian physicians in the thirteenth century made use of it in their prescriptions, and Charlemagne ordered it to be grown on his imperial farms. Rosemary abounds in an aromatic essential oil which makes the leaves send out such a pleasant scent when slightly bruised. The plant likes a sandy soil and can be grown from seed or

from cuttings taken in the spring and well watered until they are firmly rooted, and by the autumn they will be fit for transplanting into the herb-border.

Height, two to three feet.

LAVENDER.

(*Lavandula vera*.)

"And lavender, whose spikes of azure bloom
Shall be, ere-while, in arid bundles bound,
To lurk amidst the labours of her loom,
And crown her kerchiefs clean with nuckle rare
perfume."

("The School-mistress," by William Shenstone.)

One of the attractive walks in a kitchen garden is that bordered with flowering lavender bushes. The air in summer is redolent with its sweet perfume, and it is pleasant to watch the ecstasy of the bees as they hover over the flowers and rifle them of their sweet contents.

There are many uses for dried lavender. The drawing-room jar of pot-pourri needs replenishing with it each year; some must be set apart for the linen-press; scent-bags are welcome gifts for our friends, and the poor always gladly welcome a lavender bag with a helpful text attached to it. Both in hospital

and district visiting these small gifts have a distinct use, for they often pave the way for a visit which might otherwise have been refused.

In Surrey as many as 300 acres are devoted to the cultivation of lavender, chiefly for distillation, in order to obtain the oil which is much used in the manufacture of perfumes. Lavender can be increased by layering or perhaps better still by planting rather large slips in April, which can be removed when well-rooted. It will also grow from seed, but one has to wait for a year or more until the plants are large enough to produce flowers. A light sandy soil suits the common lavender and also the charming white variety, which should find a place in our herb-garden both for its sweet scent and for the delicate beauty of its flowers.

Height, when full grown, about two feet.

Many more delightful herbs might be included, but space will not permit. When once the reader has begun the planting of a herb-garden, I feel sure it will be found so interesting and pleasurable that additions to it, in the shape of herbs not mentioned in the foregoing pages, will be sought and easily found.

CROWBOROUGH BEACON¹

IT happened that during the great heat of this Jubilee year [1897] I needed to retreat to a spot where I might find quiet and a measure of coolness whilst painters invaded my home.

Years ago I heard that Crowborough, in Sussex, possessed certain charms in the way of exquisite scenery, the finest possible air, and nearness to a great forest. These attractions led me to settle there for the month of August, and possibly it may be of interest to my readers to learn a little about a part of the country where they may certainly enjoy health-giving air and lovely scenery. It will be observed that I do not recommend Crowborough's "forest," for that was my great disappointment. I had hoped to steal out very early some fine morning,

¹ "Crowborough was one of the beacon-stations of Sussex, where the ball-fire was lighted on all occasions of impending peril" (Black's "Guide to the County of Sussex," 9th ed., 1892).—ED.

soon after sunrise, and make my way into Ash-down Forest, there in leafy glades to see Nature awakening into life, hear the first songs of the birds, and enjoy some hours of quiet but intense happiness in the companionship of Nature. Alas for my romantic anticipations ! the forest now exists only in name.

"The great forest of *Anderida*," so the guide-book says, "ran through the whole of the northern part of Sussex, taking up nearly one half of the county. It extended from Kent through the whole weald of Sussex into Hampshire, and is said to have been 120 miles in length." Such a forest would indeed have satisfied my desires. I was still buoyed with hope that some portions of it existed when I heard visitors remarking to each other that they had been through the "forest" for their walks and drives, but after some days I discovered that the wild, heathery moorland still goes by the name of a forest, although scarcely any trees but low-growing Scotch firs now exist upon it.

Abundance of ironstone is found throughout this region, and the smelting works, which were in operation long ago, appear to have led to the

destruction of the timber to supply fuel for the furnaces. A law passed by Henry VIII. in 1543 with reference to these Sussex woods, though, of course, utilitarian in intention, is, I think, quite in accord with our Selbornian principles. The King ordered that "in cutting a coppice wood of twenty-four years' growth or under, a certain number of trees should be left standing and unfelled for every acre."

Crowborough is built upon a plateau over eight hundred feet above the level of the sea, so that one breathes an air which is most exhilarating and delicious ; it would have delighted the good old divine Thomas Fuller, who tells us to "choose good air, for air is a dish one feeds upon every minute, and therefore it need be good." The elevated position of this place enables one to see across ranges of purple hills on all sides, and one never tires of watching the cloud shadows flitting across the far-reaching landscape.

The Brighton Downs form the boundary of the view towards the south, and on clear days and moonlight nights it is said that one can discern the sea in the direction of Pevensey Bay,

and even the ships can be clearly seen with the aid of a telescope.

The wide stretches of moorland covered with ling and heather, the young Scotch firs forming glades of welcome shadow here and there, the keen, fresh breezes all suggest that one must be on a Scottish mountain rather than an English hillside; at any rate, the invigorating effect is the same, and one is led on and on without knowing fatigue.

At this season, after long drought, the sandy soil is rather painfully arid, and but few wild plants are to be found in flower. *Asphodel* must have been abundant in summer, for in marshy places its red-brown seed-vessels give a rich tone to the reedy grass. *Drosera rotundifolia* grows on the open parts of the moor, and more rarely the marsh gentian is also found. I am told that in spring the edges and banks abound with primroses, bluebells, and anemones, and the copses are yellow with wild daffodils.

I could not be in this neighbourhood without making a pilgrimage to the cottage known as "Downs," where in 1885-6 Richard Jefferies wrote some of his most fascinating essays, those contained in "Field and Hedgerow." The

square, stone-built cottage is not by any means picturesque, having simply a door in the middle, a window on each side, and three windows above. The furze-hedge, which used to exist in front, has been replaced by a low stone wall which encloses a small garden round the house. It is touching to think of "Hours of Spring" having been written in that lowly room facing the road, the last lines ever penned by his own hand¹ being so full of sadness, his spirit pining to be able to watch the signs of coming spring, but only "through the window-pane" could he see "a lark high up against the grey cloud, and hear his song."

There was no photograph to be obtained of the cottage, and it was only after several inquiries that I could discover where it was. So much for local fame!

During the month I have spent here I have seen but few kinds of birds and no rare species, some rich-coloured sulphur butterflies and an abundance of the commonest blue butterfly

¹ The later essays were dictated. [Sir Walter Besant writes, in "The Eulogy of Richard Jefferies" (1889), that Jefferies' Crowborough residence was "a cottage two miles and a half from Crowborough Station, near Crowborough Hill, the highest spot in Sussex,"—ED.]

flitting over the heathery ground. They rest at night on slender grass stems with their heads downwards and the wings so closely folded that no azure colour can be seen. I thought at first that they were grey flowers, so numerous were they in one special field.¹ They show a wise instinct in choosing their resting-place, for even after a night of stormy wind and rain I found them next morning waving to and fro in their aerial cradles quite unharmed, while such fragile creatures amongst tree leafage would be certain to meet with injury and death.

I shall long remember my pleasant weeks in this health-giving place—the endless drives along the sandy lanes purple with heather and ling, the far-reaching blue distances, the woodlands here and there, with young Scotch firs growing up to replace the old forest, and, above all, the pure, sweet air, which one feels must bring renewed vigour to one's brain and a greater enjoyment of life for months to come.

¹ Mrs. Brightwen apparently refers to this incident in her paper entitled "Blue Butterflies Asleep (*Lycæna Icarus*)" in "Rambles with Nature Students" (the Religious Tract Society). The scientific name, given by W. S. Coleman in "British Butterflies" (14th ed. 1892), to the Common Blue Butterfly, is *Polyommatus Alexis*.—ED.

A VISIT TO SELBORNE¹

IT had long been my desire to visit Selborne and see the home of Gilbert White, the church, the village, and all the surroundings of his interesting life.

It was therefore with a keen sense of pleasure that I was able, this spring, to carry out that desire.

Starting from the Royal Anchor Hotel, at Liphook, a charmingly quaint old hostelry, where a truly Selbornian spirit reigns, we were soon winding our way through the shades of Woolmer Forest. The pine-trees and the yellow gorse were filling the air with their rich, spicy fragrance, drawn out by a brilliant sun, while a slight blue haze gave a fuller beauty to the lovely scenery around. Woolmer

¹ This paper appeared in *Nature Notes*, June, 1893.
—Ed.

Forest is said to extend seven miles in length, and takes its name from Wolf's Mere, pointing back to a time when, no doubt, wolves existed here ; the local names of Cranmer and Hogmer have a similar origin, the former referring to cranes and the latter to wild boars.

The prolonged drought did not seem to have affected Woolmer Pond, which has an area of sixty-six acres and is a favourite winter resort of many kinds of wild fowl. To the left we see a tree-crowned height, called Hollywater Clump ; well-grown ancient hollies seem, indeed, to abound in this region, and doubtless give their name to the little hamlet we are passing through.

We duly visited Blackmoor church, erected by Lord Selborne, to whose liberality also the vicarage, schools, and neat red-brick cottages for the villagers are due.

Through pleasant lanes, decked with flowering hawthorn and banks of primroses, violets, and speedwell, we made our way for eight miles, till we drove into Selborne village. The great yew-tree in the churchyard is indeed a marvellous patriarch, measuring twenty-six feet round its massive trunk—so at least declared our guide,

but Gilbert White gives its girth as being twenty-three to twenty-five feet; it would be interesting to know if three feet in a century is the usual rate of this tree's increase in size. One cannot but look with deep interest at a tree which may have numbered thirteen hundred years of existence and is still, apparently, in vigorous health. In the west wall of the church the masons have inserted small pieces of ironstone in the plaster between the courses of stone, giving a curious spotted effect to the wall.¹

After careful examination of all the points of interest in this ancient church, we went round the outside, and saw the last resting-place of Gilbert White.

In a simple, grass-covered grave, with a plain grey headstone, lies the good man whose

¹ White thus refers to this in his fourth letter to Thomas Pennant: "From a notion of rendering their work the more elegant, and giving it a finish, masons chip this stone into small fragments about the size of the head of a large nail; and then stick the pieces into the wet mortar, along the joints of their freestone walls: 'this embellishment carries an odd appearance, and has occasioned strangers sometimes to ask us pleasantly 'whether we fastened our walls together with tenpenny nails.'"—Note of Editor of *Nature Notes*, revised.—ED.

reverent love of the Creator's handiwork has led to his name being held in affectionate remembrance by all true naturalists. Our next visit was to his house, where, by the great kindness and courtesy of its present owners, we were shown the various rooms, the private study, the ancient kitchen and hall, each in perfect order, evidently preserved with reverent care in their original condition.

Perhaps the most delightful of all was our walk through the garden, where the fine old trees, lit up by the evening sun, threw their long shadows on the soft turf.

The vivid tints of green, varied by the brown unopened buds of some of the later beeches in the Hanger, made a lovely picture. We were shown the ancient sundial, a venerable-looking stone pillar, and the narrow brick path across the lawn by which Gilbert White was able on dewy mornings to reach, dry-shod, the little summer-house, where he would sit in quietude, observing the habits of birds as they flew to and fro between the garden and the Hanger. The summer-house, alas! has been pulled down, to the great regret of the present owner of "The Wakes."

The wych elm, mentioned in "The Natural History of Selborne,"¹ still exists in great beauty and vigour, a wonderful instance of root vitality. The original tree became hollow from extreme age, and broke down with the weight of its own foliage; but, after the fashion of olive-trees abroad, the root has sent up a multitude of branches, which now form a tree of profuse foliage sixty feet across. It seems to have taken a new lease of life, and may again go on to a green old age.

It was hard to say farewell to such a lovely spot. The ivy-clad house, with its touching associations; the peaceful garden, bathed in sunlight; the pleasant converse as we paced to and fro beneath the grand old trees, will ever remain amongst my happiest memories.

On our homeward drive we passed through the village of Greatham, and there I was glad to see numbers of sand-martins busily at work in a yellow sandstone quarry. Gilbert White speaks of several colonies of these birds in the sand-banks of Woolmer Forest, but does not happen to mention this one, which is close to

¹ See beginning of "Letter II. to Thomas Pennant, Esquire."—ED.

the high-road and extensively populated by these interesting birds.

Farther on we came to the wide, open heaths, where, at certain times in the year, the soldiers from Aldershot are encamped. They have left a trace of their presence in a certain bridge of most curious construction, made by them in their leisure time. It is thrown across a valley in the woods, and is made entirely of fir trunks, cut down near by, and braced together so as to form a firm, substantial structure of picturesque appearance. The camp is quiet enough at this season, tenanted only by partridges and pheasants, which were running about quite at their ease, not at all disturbed by the sound of passing wheels.

Our pleasant day is nearly over, and as we drive up under the shade of the mighty chestnut which graces the front of our hotel, we feel we have had an ideal day of pure enjoyment, long to be remembered.

ON NATURE STUDY¹

NATURE study is so wide a subject, and is capable of being treated in so many ways, that I shall confine myself to making some definite and practical suggestions. I shall merely endeavour to indicate some of the simplest ways of making such study interesting to young people. It is probable that all the members of the Parents' Educational Union will agree that nature study should be begun in earliest childhood and carried on with ever increasing earnestness as time or opportunity may permit. I have found that, when this is done in wise and

¹ This paper was read at St. Martin's Town Hall, May 18, 1900, by Lady Campbell (wife of Sir Guy Campbell, Bart.), in the fourth annual conference of the Parents' National Educational Union.—ED.

pleasant ways, even quite little children enter into it with keen enjoyment. All living creatures seem to possess an inherent attraction for the youthful mind.

Looking back through a long experience, I see that the love of nature has been, to numbers of young people I have known, a never-failing source of pleasure, providing delightful occupation for leisure time, exercising mind and body, and tending materially to educate the senses and bring out the power of intelligent observation.

I feel somewhat diffident as to suggesting methods of study, because it is probable that I am addressing those who are far better able than I am to direct young people how to learn Nature's secrets.

For this reason I am going to ask your attention to an extract from the *Life of the late Mrs. Sewell*, authoress of "*Our Father's Care*" and mother of the writer of "*Black Beauty*." My friendship with her taught me much that has proved of lifelong value, and I would strongly recommend her biography as an extremely helpful book, full of suggestions to parents and all who have the train-

ing of young minds.¹ Speaking of the cultivation of the mind in earliest years, Mrs. Sewell says: "I should be very glad to see the art of drawing from nature more systematically and thoroughly carried out in the education of young girls. I have often thought if half the time were given to that which is now all but exclusively devoted to music, it would prove, if not a more valuable acquisition, at any rate to the full as valuable . . . to those who are likely to have the care of children, which all may expect in some way. A lady who has a free use of her pencil, and [is] able to make a ready sketch of any living thing she sees, is sure to attract a group of delighted children round her. Scarcely anything pleases children so much as to see graphic sketches of men and animals growing under the pencil of a lively artist. . . . A mother who has this facility would have her slate, with pencil and sponge attached to it, as constantly on the table as her work-box. I will just give a little practical sketch of its use.

¹ "The Life and Letters of Mrs. Sewell," by Mrs. Bayly, 3rd ed. (London, James Nisbet & Co., 1889), pp. 106-9.

A little boy, we will say about four years old, runs from the garden to his mother. 'Oh! mother, do come and look at this beautiful thing on the rose-tree. I want to know what it is.' 'I am busy now, Charles. Tell me what it is like. What colour is it?' 'Oh I think it is red.' 'Oh I suppose it is a lady-bird.' 'Oh no, it is a great deal bigger than a ladybird.' 'Well, perhaps it is a tiger-moth, that has two red wings. Look—like this,' and the mother slightly sketches the tiger-moth on the slate. 'Oh no, it is not at all like that.' 'Is it this colour?' 'No, it is not so red as that.' 'Perhaps it is the colour of this mahogany chair?' 'No, not just like that.' 'Perhaps like this nut.' 'Yes, it is very much like that.' 'Well, this is light brown, not red. But what shape is this beautiful creature?' 'Oh, I think it is round.' The mother draws a round figure on the slate. 'Is it like this?' 'No, not so round.' The mother makes a long thing in the form of a long caterpillar. 'No, it is not so long.' The mother then draws an oval. 'Yes, it is very much like that.' 'And has it no feet?' 'I think it has some feet.' 'How many? I suppose two feet, like

the birds.' Are they like these?' 'Oh no, I am sure they are not like those.' 'You had better go and look at it again, and come and tell me.' 'Mother, it has six legs.' The mother draws two on one side and four on the other. 'Is that right?' 'No, it has three on each side.' The mother corrects it. 'Is that right?' 'Yes, that is really right.' 'And what sort of head has this wonderful creature?' 'Oh mother! its head is like the branches of a tree.' The mother immediately attaches a small branch of a tree to the body, with several twigs, not forgetting a few leaves. 'Is it like this?' 'Oh no, it has no leaves.' She rubs out the leaves. 'Like this, then?' The child looks at it intently. 'It has not so many little twigs.' 'Perhaps you had better go again and see how many twigs there are upon the branch.' 'It has two branches and one little twig on each.' The mother then carefully sketches the stag-beetle, and a rapturous burst of applause follows; and the mother turns to her natural history, shows the delineation, and ends its history.

"You will see by this example how much of accurate observation this lesson will have

taught the child. Children never weary of this sort of instruction, and it is impossible to calculate how much the child will gain; very soon he will endeavour to guide his mother's fingers to the correct form, and next endeavour to form the figure himself.

"The value of the habit of accurate observation is not to be told, nor the unceasing occupation and interest it has given to children. In this way a child obtains the power of using his own mind, and he learns the value of correct language and description. There would be no end to lessons of this kind, including all natural and artificial objects, and each one bringing fresh knowledge, and, if the teacher be skilful and cheerful, both moral and spiritual instruction. Had the mother simply complied with the child's request, and gone into the garden and said, 'That's a stag-beetle,' the subject would have been closed and the child's interest quenched. Had a servant been with the child, she probably would leave the question thus—'Oh, that's a nasty beetle; don't touch it: or it will kill you with those great nippers: come away from it:' then the child would not only have its interest

quenched, but fear created, and the creature would become an object of disgust. Children led on after this manner will daily become less troublesome and more interesting; they will find their own amusements, and the more they learn, the more independent will they become of toys and nursemaids. Do not help too much. If they are utterly at a loss, suggest and hint, or furnish a clue which, through their previous knowledge, you believe they will be able to follow; but let them come to an end of their capacity before you give direct information: this will teach them their own ignorance and increase their sense of your superiority and their confiding trust in your wisdom."

I am tempted to go on quoting from this delightful book, for it is full of wisely thought out advice on a variety of subjects.

If it is possible to arrange a daily natural history lesson, it is, I think, well to limit the subject to one specimen at a time, so as to avoid confusing a child's mind. The insect, plant, or whatever the object may be, should be examined, questions asked about it, and information given; then, perhaps, books may

be referred to, and still there may remain difficulties unsolved, which can be entered in a notebook. On visiting a museum, or meeting some scientific friend, the required information may finally be obtained.

As a case in point I may mention that I had to wait for fifteen years before I could discover a specimen of the cedar of Lebanon cone as it exists when first formed on the branch.

The fruit is usually most abundant upon the upper branches, where the cones are invisible until they are nearly full grown. Still, I watched and waited, and at last I found the small green cone, and this enabled me to complete a drawing of the fruitage of the tree.¹

Although I do not think it is well to encourage quite young children to make collections of insects, since it is apt to lead to much unintentional cruelty in killing and

¹ See pp. 176-8 of "Rambles with Nature Students" (2nd ed.), for Mrs. Brightwen's account of "The Cedar of Lebanon (*Cedrus Libani*).¹" She found the fruit for which she had waited so long on the lower branches of one of her own cedars. —ED.

pinning out the specimens, yet I do strongly advise the study of such creatures as can be kept alive and happy for a few hours, or, in some cases, for a day or two, so that their curious habits may be observed. In this way I kept a female earwig for three weeks and saw her brooding over her nest of eggs, and finally hatching out a vigorous family of about forty infant earwigs, which were snow-white when born but soon turned light brown, and appeared to be well able to feed and take care of themselves. I found the insect early in May, under a piece of clinker. I removed her with her eggs and a little earth, and placed the insect mother under a tumbler on a saucer, where she soon made herself at home. I could thus easily watch her from day to day. A drop or two of water, a slice of pear, and a morsel¹ of raw meat afforded her suitable food; and a few days after the eggs were hatched I set the whole family free, having learned far more by this insight into earwig life than I could have gained by book study.¹

¹ See p. 152, "Wild Nature Won by Kindness" (26th thousand), for Mrs. Brightwen's elaborated account of the earwig mother.—ED.

The rose-beetle is another interesting creature, which can be made happy for months in summer by supplying it with a fresh rose in its cage every few days and a lump of moistened sugar. Stag-beetles, drone-flies, hornets, and many other insects I have found well worth studying in this way ; food, water, and air must, of course, be carefully supplied for the short time that the captive is detained, also shelter from the direct rays of the sun, so that we may not in any way lay ourselves open to any suspicion of cruelty in our pursuit of knowledge.

I would conclude with an earnest protest against any thoughtless waste of either insect or plant life. It grieves me to learn how rare specimens are, every year, becoming more rare through the wanton destruction wrought by wholesale collecting. Of this I can give a local instance. Some years ago I found sundew growing on Stanmore Common ; it was a pleasure to know that this charming little plant was flourishing so near London, and I need not say that I left it untouched. Unhappily, the fact became known, and some men came from town and dug up every specimen,

and, I believe, sold them in Covent Garden Market.

Children should be taught to admire and learn about everything in nature, but there should be such a reverent feeling mingled with the admiration that no thought of destroying a beautiful insect or tearing up a rare plant could be anything but painful to a right-minded young student.

In every plant and bird and insect there is a life-history to be learned more interesting than any story, and I would urge parents to make themselves acquainted with these life-histories by obtaining and studying some of the many admirable books on natural history which abound in the present day. They will then be enabled to pass on the information in happy talks with their children, till they become eager little naturalists, loving the book of nature, and seeing in it, not only endless things to admire and wonder at, but evidences on all sides of the works of an all-wise and kind Creator, who has so marvellously fitted each living thing to fill its appointed place in creation and fulfil the duties assigned to it as a part of a great harmonious whole.

DIARY OF A TOUR MADE
BY ELIZA AND GEORGE
BRIGHTWEN IN 1870¹

July 5th, 1870.—Left Elderslie at half past two, went to Euston, and thence to Dover. The country looked sadly parched, the hayfields uncut or covered with little heaps of brown hay which would be almost worthless as fodder, the corn ripening fast and changing colour. The hop grounds alone looked green and vigorous.

July 6th, Wednesday.—Embarked at nine; started at a quarter to ten. A thick drizzling rain compelled a retreat to the ladies' cabin, that chamber of horrors. About forty unhappy beings sat or reclined on sofas, shelves,

¹ The drawings illustrating this diary are all by Eliza Brightwen.—ED.

and floor, and one in despair subsided upon the cabin stairs. Some one should have been there with "collodion in his eye" (as was said of Gustave Doré) to take some mental photographs of wretchedness under divers aspects. Happily, I was not amongst the slain. We disembarked at Calais upon a very green and slimy pier, slippery with seaweed.

A short line of railway brought us up to the proper station, when we started for Brussels. Very soon the drizzling rain ceased, and the sun shone out. The country for a long way was perfectly flat, most carefully cropped so as not to lose a yard of ground ; no fences of any kind were to be seen ; field after field of wheat, barley, oats, and mangel showed vigorous health and growth—such a contrast to the fields we lately passed through in England. There certainly was not much hay, but where it had been the green tint was refreshing to look at ; the trees, too, looked fresh and unspoilt by the heat. Flax was being cut and put into neat little sheaves. Rape or colza (which we should call cabbage) was lying to dry in the sun, and in one field the thrashing had already begun. It is done in the middle of the field,

men and women using the flail, and the grain, when put into the sacks, is carried to the mill to be pressed for the rape-oil which we burn in the Moderator lamps. The ground was continually divided by canals lined on either side by pollard willows, and as no other tree was to be seen, and the crops were frequently of the same ashy-green tint, it gave a curious sameness to the view. One felt quite grateful for the delicious bit of colour when a blue man led a red cow across one of these ashy fields, or some women with gay kerchiefs were at work in them. The fields of wheat were *fine*, not perhaps so high as last year (when, we were told, the straw was seven feet long), but full of ears. Country carts were creeping along the roads, the horse so far in front of his load that he seemed as if he was not connected with it. Bullocks were drawing wagons full of vegetables; they were not yoked, but drew their loads by a band which went round the forehead. A piece of sheepskin under the band prevented chafing. The opium poppy was in full flower, forming sheets of lilac and white, a very lovely crop. We were all turned out at the barrier, but only one of

our packages was opened. We have a little basket of preserved meat, &c., for use at the Engadine. It is labelled "Comestibles pour les Alpes," and here, where French was spoken, it passed untouched, but we were not so fortunate later on at the Prussian frontier. We stayed the night at Brussels.

July 7th.—Left early by train for Cologne.



HEAD-HARNESS OF BULLOCKS.

Although the twenty miles through the valley of the Vesdre showed us lovely romantic scenery, the intense heat and quantity of dust blown in at the window greatly marred our enjoyment. My lap became quite a geological study. Sand and grit and shale and cinders found place in it according to the kind of country we were passing through. At Aix-la-Chapelle we intensely enjoyed some

Mai Trank brought to us in little German glasses like beer-barrels. I remembered seeing the recipe for making it in Eliza Acton's "Modern Cookery"—a compound of red wine and white wine, orange slices, sugar, and some small bunches of woodruff (*Asperula odorata*). Here we tasted the real thing, and I shall always rank it as *the* most delicious beverage I ever tasted. At Verviers we had again to alight and give up our keys, it being the Prussian frontier. This time none of the *douaniers* spoke French, and we could not speak German, so when they saw the label on our little hamper it seemed a mighty puzzle, and we could not explain the harmless nature of its contents. One looked at it and called another to look at it. I think they must have thought *comestibles* meant *combustibles*, for they asked for our passport. Such a thing is not usually required now, but George happened to have with him an old one of 1855 with the arms and signature of Earl Russell! This he produced, and it was examined, and they turned out the contents of the basket. Liebig's Extract was a puzzler. They smelt it, and shook it, and talked about it till we were tired of wait-

ing, but at last they seemed to decide it was all harmless, and repacked the unfortunate hamper. However, they took our address, so that if the thing should blow up on the way they might hold us responsible. Now we saw the fresh green of the umbrella acacias growing in avenues. Men were smoking pipes reaching



ACACIA.

down to their knees, doing nothing at all, whilst women were out in the fields toiling in the hot sun, carrying heavy burdens, hoeing, reaping, &c.

At Cologne, where we stayed the night, we had rooms overlooking the paved street, so we endured the clattering of all the vehicles going to and fro with luggage, the roaring of the

steamers on the quay, the loud tones of fish-women and porters talking unmusical German, and above all the screaming of the swifts. They seemed to have a number of private feuds which were being arranged on the wing, apparently calling forth the strongest expressions they are in the habit of using. As far as I could see these feuds were never settled, for



SWIFTS.

each town appeared to have its own vexed questions, and I suppose they are not peculiar to the swifts. This steamboat quay had a rather lengthy German name—*Dampfschleppschiffahrt!*

We found great interest in exploring the quaint, narrow, irregular streets of Cologne. Each one would have made a picture. The old wooden houses, like those at Chester, over-

hung the pathways, and made deep picturesque shadows; the narrow streets seemed to have even narrower ones leading out of them; the offensive smells could hardly be wondered at, and how people could live at all in such unventilated and insanitary alleys seemed a marvel. The street pumps are ponderous affairs, reaching up to the first floor windows, and apparently needed considerable strength to put them in motion.

COLOGNE, *July 8th, Friday.*—Went to the cathedral. The pictures of it on the bottles of eau-de-Cologne give one an idea of a grand spire, but it is the spire of the future, and will not be completed for six or eight years, so that at present it lacks that ornament, though it is being built and making good progress.¹ High Mass was going on. We sat down and waited till it was over, and we could see the choir. A nun was in prayer, with her arms outstretched, I suppose as a penance. In the relic chapels are the shrines containing the skulls of the

¹ Cologne Cathedral was finished in 1880. The spires rise more than five hundred feet above the pavement of the nave. The height of the central aisle is 154 feet.—ED.

Three Kings of Cologne—Gaspar, Melchior, and Balthazar—the supposed names of the Magi. The stones let into the shrine look of enormous size, but many of them are not real. There were some curious relics for those who could believe in them—a finger of St. Matthew, a rib of St. Lawrence, and so on. There were some antique croziers of rather pretty designs, and the old font in the cathedral was very quaint in form and decoration. The sacristan was a fine-looking old man, with a picturesque dress.

We went to see the museum, where good and bad pictures seemed strangely mingled. Some Albert Durers (engravings) and some very curious painted glass, old missals, coins, &c., made up the collection. Went to Oppenheim's bank, up an oaken staircase, and then into a cool, quiet office, where business was transacted behind wire screens. A large quantity of money was being sent out in little canvas bags. Three on a man's shoulder and one in his hand seemed as much as he could carry at once, thalers being no light weight.

At the Church of St. Ursula we saw, through

little niches in the walls, the bones of some of the eleven thousand virgins¹ who were murdered by the Huns at Cologne when returning from a pious pilgrimage to Rome under the guidance of St. Ursula. In the chancel are rows of skulls, for each of which a little embroidered cap had been made by some pious nuns. Surely they would have been far better employed in caring for and nursing living people than spending their time in making skull-caps for the dead! The old Sacristan begged us to go into some place called the Golden Chamber, where he would show us the real crown of thorns, one of the water-jars used at the marriage at Cana, some of the blood of St. Ursula, &c., but we declined to believe in them, and refused his kind offer.

The women in the markets are very picturesque, with a white cloth over their heads, a red shawl, and blue dress (they vary, of course, but those are the prevailing colours).

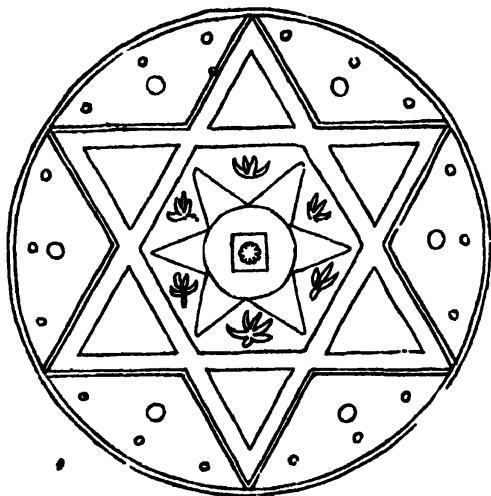
A great many dogs are used for pulling

¹ The number is as doubtful as biblical chronology, and can be ingeniously reduced to eleven. See S. Baring-Gould's "S. Ursula and the Eleven Thousand Virgins" in "Curious Myths of the Middle Ages" (2nd series, 1868).—ED.

carts ; the poor things have a very hard time of it in this intense heat. Always muzzled and often lying in the sun with their harness on, they can get little ease even when lying down. I do pity the poor, uncomplaining, ill-used creatures. There is ample room for a foreign Society for the Prevention of Cruelty to Animals.

We left Cologne by train, and reached Bonn in the afternoon. We had rooms at the Hôtel Royale, high up, and giving us a splendid view of the Rhine and the opposite country. In the hotel garden pomegranates and oleanders were in full flower, growing in large green tubs ; some of them were quite old trees. The pomegranates had such gnarled and twisted stems, like miniature oaks. A bed of flowers designed like a double triangle had a very good effect. A Paulownia (a tree with leaves nearly as large as rhubarb) made a pretty contrast with other trees ; it is very like the catalpa in colour and shape, but has much larger leaves and grows faster. In the evening we had a carriage and drove to the house Prince Albert once lived in, saw the Beethoven statue, also the new Protestant church, a really handsome

building, rivalling the Catholic cathedral just opposite. Our driver, pointing to the latter, said, "All of rock," meaning stone; then, turning to the Protestant church, he remarked, "Only bricks." It was good-naturedly said,



A BED OF FLOWERS DESIGNED LIKE A DOUBLE TRIANGLE.

but I think he meant it to convey his estimate of the two religions!

We saw where the young Prince Alfred¹

¹ Duke of Edinburgh, second son of Queen Victoria.
—ED.

lived when a student here, a pleasant, modest-looking house, close by the long avenues of horse-chestnuts which abound here. We drove on to Kreuzberg, passing Poppelsdorfer Schloss on the way. A number of human bodies in a sort of dried mummy condition used to be shown there, till, as our driver told us, an Englishman stole a finger of one of them, and after some time sent it back, and so the theft became known, and the bodies were more carefully secured, and can only be seen by climbing up a ladder and looking through an opening. It was amusing to see or hear the difficulty of pronouncing our "th." Our driver said: "One of the bodies has his mouse open. He died of somesing terrible, so he could not shut his mouse!"

BONN, *Saturday, July 9th.*—Left at ten o'clock in the steamer *Friede* to go up the Rhine to Biberich and thence to Wiesbaden. The boat was filled with Americans, who seemed greatly interested in the old castles. One, who was a regular old Brother Jonathan, tried to sketch vigorously as we went along, and looked with real enthusiasm at each ivy-covered ruin. We heard him express himself

to a companion thus : " I say, I reckon yer don't see such as these down at Sandy Hook ! " ¹

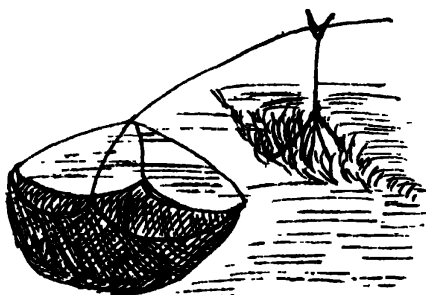
There was a pleasant awning under which we sat sheltered from the sun. There seemed very little traffic on the river ; a boat laden with straw or deals, a steamer now and then, were the only moving objects except the curious timber rafts. The timber rafts are formed of tree stems securely bound together, and forming a kind of floating village inhabited by four hundred or more rowers and workmen. The boatmen often have their wives and families with them, and poultry, pigs, &c., are kept on board. The trees are cut down in far-away forests, and hurled down by mountain streams until they reach the Rhine, where the smaller rafts are added together until they form these great structures, 600 or 700 feet in length. They are flexible so as to wind through the turnings of the river, like great serpents, yet they do not draw more than two or three feet of water. They float down to Dordrecht, where they are sold. They are generally the property

¹ George tells me he heard the answer to this, which was : " No, but I calculate we could buy the whole thing up ! "

of a number of shareholders, and one large raft will produce £25,000 to £30,000.

A curious umbrella-shaped net seems used for fishing along the banks; the rapid current, I suppose, drove into the net the fish I saw in one, and kept them in whilst the net was drawn up.

We soon came into the region of vineyards.



AN UMBRELLA-SHAPED NET.

Every foot of ground seemed made use of. Where it was very steep terraces were formed and earth carried up for the vines to grow in, and so the vineyards crept up the mountain sides till there was nothing but bare rock. The vines are a bright fresh-looking green, but not much higher than our raspberry bushes.

At Coblentz there is a curious bridge of

boats, and there is a similar one at Mayence. Soon after leaving Coblentz a thunderstorm came on with wonderful rapidity; the calm surface of the Rhine became covered with white breakers, the wind blew violently, carrying away several hats and caps, and almost taking their owners with them. There was a sudden retreat to the cabin; thence we saw a grand prospect, the old castles standing out against a deep purple sky, lighted up each moment by brilliant flashes of lightning. Crashes of thunder kept on unceasingly for nearly an hour, then the heavy pelting rain had pleasantly cooled the air (for it had been distressingly close and hot), and when it ceased we went up on deck and greatly enjoyed all the rest of the way.

The Rhine scenery may be truly described as a succession of well-wooded heights, each crowned by its own ruined fortress. The lower spurs of all the mountains are covered with vineyards down to the water's edge. The Rhine has not the lovely blue colour of the Rhône, but under a sunny sky is pale yellowish green. Owing to the long-continued drought the water was so low that the steamer had to

cross from one side to the other in order to keep in the deepest parts, and so our arrival at Biberich was delayed some hours. We had a very narrow escape of running into a timber raft which had somehow swung across the river; this was late in the evening, when the moon was rising. The raft had two lights in front, and I had noticed for some time that they raised and lowered one of these lights and whistled long and loud, but I imagine the man on guard had not seen these signals till we were close upon the raft. Then there was a grand stir; the steamer backed, and one watched with some little excitement the lessening distance between us and this huge mass of timber.

It was eleven at night before we reached Biberich. There we landed, and wishing to get quickly to the hotel, we took a carriage and pair instead of the omnibus. I suppose there must have been a jealous feud between the men who drove the different conveyances, for directly George took a man with him to fetch the luggage the rest set upon the man and there was a general quarrel. Angry Germans can make a fearful noise, and besides that they

shook their fists in each other's faces and rushed at each other like furies. At length George took forcible possession of the man by his coat collar and made him come to the wharf, and he did at last bring our box, &c. I experienced an odd mixture of the beautiful and the ludicrous as I sat alone in the hired carriage at eleven o'clock at night. The beautiful was supplied by the lovely moonlit scenery and the boat with its lighted windows steaming away up the river, and the ludicrous took the ugly form of fifteen or twenty men venting their anger upon each other by word and gesture. Our driver set off when all was ready like one possessed, lashing the horses to full gallop till my heart ached for them, and their speed so jolted the carriage that one of the doors flew suddenly open and out went my handbag into the road. As soon as we could stop I went after it, and picked it up just as a man was stooping for it. My poor bag had been crushed by its fall and the carriage wheel, and contained the *débris* of broken phials of various kinds, the liquids charmingly mixed with all the other contents. We reached the hotel at a quarter to twelve, and had a

thunderstorm in the night, and so ended this rather eventful day.

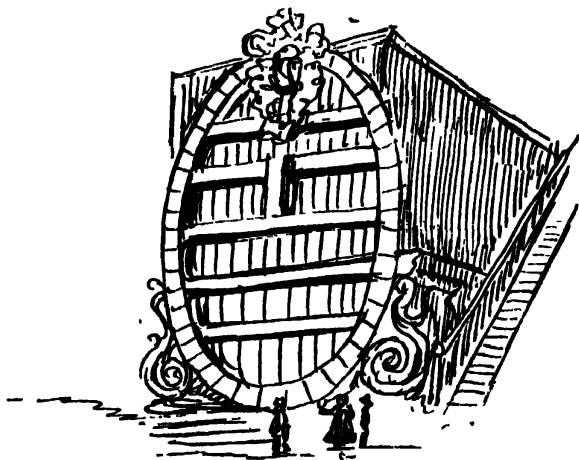
WIESBADEN, *Sunday, July 10th.*—A lovely morning, but very hot. There is a very nice, well-appointed church, which was well filled in the morning. An old gentleman preached a fair sermon on the man with the palsy, and applied it to the subject of an approaching confirmation, where those who had been brought *by their friends* to baptism (as the palsied man was brought to Christ) were now of their own accord to come with hearty purpose to live to Him. Surely a rather curious application of the text.

There is a very pretty sort of square or garden near our hotel ("The Four Seasons") with some curious trees in it; oaks growing like poplars, catalpas in flower, some very handsome limes with immense leaves^d and very fragrant flowers, and many others whose names I did not know. I saw a lizard, brown and red in colour, running in the grass; it was nearly a foot long.

Monday, July 11th.—Left by train for Heidelberg. After a very short ride we all went on board a steamer and crossed the Rhine

to Mayence, a very picturesque, curious old town. We only stayed long enough to get our luggage, and then went on by train to Heidelberg. In the afternoon we had a carriage and pair and went up to the top of the mountain at the back of the town ; it is 1,860 feet above the level of the sea. At the top is a tower called the König Stuhl, from which the view is magnificent ; the windings of the Neckar can be traced a long distance, and far off one catches a glimpse of the Rhine. The old red-coloured castle was far below, and the town below that. The foliage was principally sweet chestnut ; they looked lovely with their soft feathery blossoms borne in profuse clusters at the end of every spray, the air was scented with them. At the top of the König Stuhl small flies came buzzing in one's face and worried one out of all patience. There was no seeing or sketching or doing anything for them, so at last I put up my umbrella, and, strange to say, it kept them off capitally ; they came pattering on it like rain, but none came underneath. We stopped on the way down to see some very large trout which are kept in ponds ready for use. Then lower down we went to see the

castle; it seems built of red sandstone, which looks so well with the rich green ivy, the aristolochia, and Virginian creeper. There are still some grand façades left standing, and their sculptures seemed even now sharp and well



HEIDELBERG TUN.

preserved. We went down to the cellar and saw the great tun, which one hundred years ago was for the last time filled with 283,200 bottles of wine.¹ Our man had a very good

¹ The great tun is said to have capacity for holding 49,000 gallons.—ED.

pair of horses, fat and well cared for. They were his own ; he had paid £60 for the pair, we were told. They did a hard day's work in a broiling sun, and did not seem in the least distressed.

Tuesday, July 12th.—Left Heidelberg 'by



PEASANT WOMAN.

train for 'Basle (it is also spelt Basel and Bale). The fields of Indian corn looked beautiful with their 'long green tassels. Another crop is frequently grown with it,

either beans or gourds. Now we see little gentle-looking cows drawing carts with farm produce, the women leading them and loading the carts, or else walking along with large bundles of grass upon their heads.

At Carlsruhe we stayed a while for lunch; amongst other things they gave us peas cooked in the pods; they were very tender and nice flavoured. In flat, swampy fields we saw not unfrequently large black and white storks, and once I saw a crane standing on one leg watching for fish in a pond. Great numbers of hawks and magpies may perhaps have accounted for the entire absence of game. We have not seen a pheasant or partridge anywhere on the way. I noticed one red deer peering at us on our way down through a wood near Heidelberg.

The crops are so pretty, it is half the pleasure of travelling to see them looking so rich and abundant. To-day we have seen tobacco and hemp in many places, the latter very light and graceful. We reached Basle in the evening, and stayed at the "Croix Blanche," a very pleasant hotel, looking upon the Rhine. Some very delicate single white oleanders were

growing in tubs here, making a contrast with the pink ones.

Wednesday, July 13th.—Went over the new Protestant church built by a merchant of Basle at a cost of £250,000. It is built of a hard grey stone, and all the carvings are most carefully done and all different; every capital and



HEMP.



TOBACCO.

niche has its own device. There are two hundred chairs beautifully carved, and each one a different design; all the carvings of the pews varied also. It is a building which would have surely delighted Ruskin by its absence of uniformity. It is dedicated to St. Elizabeth.¹

¹ St. Elisabethan Kirche was erected by Herr Merian-Burckhardt, who died in 1858.—ED.

We went to the cathedral, which I had seen before, and also to the museum to see again the wonderful Holbeins, especially the solemn picture [by Holbein the Younger] which dwells so vividly in my mind—his "Dead Christ."

Left Basle at half-past two for Zurich.

Thursday, July 14th.—Left Zurich at nine, and had a pleasant steam up the lake to Rapperswil; the scenery is pretty, but not to compare in beauty with Lucerne; the colour is not so lovely a blue, though far prettier than the Rhine. There were graceful little boats floating along laden with large stones for building purposes. Now we sometimes see a curious Swiss headdress—the one worn by the Black Forest women is very odd and striking. At Rapperswil we landed and went by train to Ragatz—a most *exquisite* piece of scenery. The railway goes by the side of a lake called Wallensee, and beyond it are fine masses of rock and mountains down which cascades were falling like silver threads. These mountains were several thousand feet high, beautiful in colour, and, reflected in the lake, they formed a sort of double picture. The villages on the margin of the lake looked like dolls'

houses, so dwarfed were they by the amazing height above them. There were a great many tunnels the whole way, as there were so many spurs of rock to be passed through. When we left the margin of the lake, we passed through fields which seemed like beds of flowers. I saw white water-lilies growing wild in profusion, also hennip, agrimony, meadow-sweet, loosestrife, marjoram, bogbean, madder, and many plants I did not know. We now passed through a lovely valley by the side of the Glarus mountains, which were a lovely colour—a sort of mauve purple. Now we passed the *œnothera* in flower, and up far away on the heights we saw the first *snow*!

At Ragatz we found a grand hotel with an immense dining-room, containing perhaps fifty tables and two hundred chairs and twenty pairs of curtains to the windows. A band played nearly all day in the grounds. There were some pretty little fountains here and there, a rather gay garden of flowers, and most inviting walks up into the wooded heights leading out of the garden. We heard frogs croaking loudly in the evening. I think from the sound they must have been tree-frogs.

Had a carriage and drove through a grand rocky gorge to see the baths at Pfäfers; it is a grand drive, a good deal like the Via Mala, only the gorge is not so deep. When we reached the building where the patients are received, we left the carriage, and walked through long passages, meeting a few sick people on the way, till we came to a door leading on to a wooden gallery constructed along the face of the dark, awful-looking cleft in the rocks leading to the actual source of the hot spring. The stream dashes along far below almost out of sight, and above the rocks nearly meet, so that light is almost shut out. We went on for some distance until we came to a door in the face of the rock. A man stood by it, who asked us to take off our outer garments. George in shirt-sleeves, and I minus my waterproof stood wishing to know what we were to do next. Then the door was opened, and out came volumes of steam. The man took my hand and marched me into total darkness and an atmosphere like the inside of a tea-kettle. I thought of the famous line in Dante—

“Lasciate ogni speranza voi ch’entrate”;

but I did *not* lose all hope, for I supposed a great many people must have entered this inferno before and most likely came out alive, as I hoped to do, so I walked on, seeing nothing at all but darkness, until at last the guide said "Voilà l'eau!" and I became conscious of a ray of light from some chink above, which showed a pool of water. A tumbler was dipped in and we tasted some warmish water, of which a little was sufficient. This, then, was the source of the famous baths. The water wells up hot from some subterranean source and, after supplying the establishment on the spot, is conveyed by wooden pipes along the face of the rocks *four miles* to Ragatz and supplies the baths there. We came out very hot and steamy and glad to put on our wraps again. Hardly a ray of sunlight can rest on the bath-house or its inmates. Sunk as it is in a deep ravine, it does not look a tempting or wholesome place for invalids.

Friday, July 15th.—Left Ragatz by rail for Coire; passed through lovely scenery and saw exquisite flowers and butterflies by the way. The swallow-tail and the Apollo seem to be common here and look so handsome hovering over the flowers.

At Coire the carriage we had ordered was ready, so we started on our two days' journey to Pontresina. The heat, the dust, and the flies made the first few hours very far from pleasant. We passed little country carts drawn by the sweet, gentle little cows so like our Alderneys, only fatter and beautifully sleek. They seem very docile; the driver leads and turns them by simply holding one of their horns; they cart nearly all their crops with cows. The hay is being gathered in: it consists more of wild flowers than grass, and must be rather rough and coarse in quality. Mistletoe grows here on the apple-trees, but I have not seen it on any other trees, as in Normandy, where it grows on the lime, poplar, acacia, &c.

At Tamins we had three horses, as the way becomes very steep. A mountain stream from the glaciers of St. Gotthard and another from the Splügen unite at Tamins and form the beginning of the mighty Rhine. We have really traced it now to its infancy: a little milky, turbulent rivulet it is, tumbling over the rocks like a child with a strong will of its own. Now we wind up and up a steep ascent, mile after mile, till we reach Thusis,

where they give us some dinner, and then, while our horses rest, we have another carriage and drive through the Via Mala, a very grand



THE SCHYN (*pronounced* Sheen) PASS.

sort of gorge or ravine. The road is carried along the face of the rock, sometimes piercing through by a tunnel and in other places crossing over the ravine by a bridge. The sides of •

the precipice approach very near in places; the effect is very grand both up and down. From Thusis we went on our way and found the road over the Schyn Pass even finer than the Via Mala; the elevation is greater, and the road winds in a marvellous way—one wonders how it could ever have been made. We passed the night at Tiefenkasten, at a comfortable little inn with a little glacial river running past its walls, making such a noise we could hardly hear each other speak.

Saturday, July 16th.—Left Tiefenkasten and made our way with three horses over the Julier Pass. Very fine scenery all the way. Stopped at Mulins for lunch, then went on to Silva Plana, changed horses, passed the pretty lake of Silvaplana, through St. Moritz and Samaden to Pontresina, where we found our room ready at the Hôtel Krône.

Sunday, July 17th.—Went to the church, which is close by. There is a service at ten in Romanisch, a sort of Latin spoken by the people here, and then our services at eleven and half-past three.

Monday, July 18th.—George walked to the Roseg Glacier. I went up the mountain at the

back of the hotel and found a curious wasp's nest on a stone, which I brought home, wasps and all! Chloroformed them, and secured the nest. *Linnæa borealis* grows abundantly all about the pine-woods—a lovely plant. I do not wonder Linnæus was so charmed with it and gave his name to it. It spreads over the ground like a little vine, and every spray is covered with its pretty pinkish-white flowers. Moonwort grows here too. In the afternoon I took a long walk to meet George on his return. The pines here are covered with long hoary lichens, pale green and black, the latter so like hair it looks like long wisps out of a hairdresser's shop. We dined at the *table d'hôte* and in the evening in the same room there was a Tyrolese concert performed by two men and two women. They sang very well indeed, playing the guitar and zither. Their dress was picturesque, the men with broad hats set on one side and the women with black velvet bodices and white sleeves.

Wednesday, July 20th.—Had a carriage and drove to the Bernina Inn, there got out and in the pretty flowery fields caught Apollo butterflies and various other kinds. The hay is being.

made on all sides ; the air is very sweetly scented with it, Men and women work away together, using curious-looking tools. A wooden fork seems to do the most of the work, as it acts as a rake equally well. The cows are yoked to the hay-carts, and drag great loads without



WOMAN RAKING.

much apparent effort, though very slowly. They are just the delicate mouse colour of our Alderneys, with the soft eye and symmetrical limbs, but much larger, fat and sleek. They generally eat quietly by the haymakers, and when wanted to take home a load are led

by a horn, put into the carts, and trudge away most patiently. The hay is tied up in large burdles before it is loaded, and then the hay-cart goes into the hay-stable as it is and can be unloaded at leisure. When we had spent an hour or two at the Bernina Inn fields, we drove part of the way back and then turned off to the Morteratsch Glacier. • We had only a boy driver and a very hard-mouthed horse, and in passing another carriage in a narrow road the two vehicles came in collision, and my dear husband's arm was a good deal bruised, but happily no serious injury befel us or the people in the other carriage, so with a wet handkerchief bound round the arm we went on to the glacier, a pretty walk through rocks and flowery paths, till we came to the source of the glacial stream. The sort of cave of ice from which it issues is just like the one at Chamonix, the source of the Arve. This cave is formed by the melting of the snow when it reaches the warmth of the valley and out gushes the snow water in a rushing, impetuous stream, retaining its thick, milky colour for many miles below its source. This icy-cold water was the best possible remedy for the bruised arm, so the bandage was here dipped •

into the stream, and very effectually it subdued the inflammation, for next day no stiffness was felt and no bandage was necessary, though it had been a large black bruise and the skin grazed off in several places. The air was delicious to-day—with the keen, almost frosty, quality it has on a fine day late in autumn. One gets a curious alternation of heat and cold here. In a sheltered nook in the sun the heat is sometimes intense; then you turn a corner and down comes a breeze straight from the glacier with all its coldness, yet so sweet and pure, full of delicious perfumes from the flowers and trees. I quite think it is *the most beautiful* place I ever stayed at; every sense is gratified without fatigue.

Thursday, July 21st.—Had a carriage and drove to Samaden, a village near here, not so pretty as Pontresina; it lies more exposed to the heat and glare of the sun with no nice shady woods near at hand. We walked through it searching for a Romanisch newspaper, which we found at last in a queer out-of-the-way shop. We had to walk into the room the people lived in, and there was a woman dressing her baby. They wind up the poor little creatures in swathes

of cloth, so that they can't move their legs, and they are laid on a sort of stiffened frame for the convenience of carrying them. I wonder they live to grow up. These were twin babies, and the other one was shown to us lying on a bed, and positively, in this almost tropical weather, it had another down bed on the top of it!

We drove on to St. Moritz Lake, and there I botanised while George drove on to the



WOOD-ANT.

baths. I found some beautiful gentians, but not much besides.

Friday, July 22nd.—Took a charming walk with George to the Statzer See, through a wood of pines overgrown with lichen, which hung in long streamers of green and black. Large wood ants swarm everywhere; they form such immense heaps of dry pine needles and other leaves, nearly a yard high. They are evidently the scavengers of the woods, and instantly set to work upon any dead

animal substance, carrying it off in little pieces, and with their powerful nippers they hold their prey with such pertinacity you may roll them over and over and they will not let go. They are very much larger than the common ant. The Statzer See is a very small lake, but prettily situate, with wooded heights on all sides. We found the common and the rare sundew (*Drosera rotundifolia* and *longifolia*) growing on the margin of the lake in a regular black bog covered with the white, silky cotton-grass—such a contrast of colour! As I came through the village the church door was open, so I went in and sketched the curious time-measurer attached to the pulpit; it is a little frame containing four sand-glasses to measure the hour, three-quarters, half, and a quarter of an hour—so that the preacher may time his discourse accordingly. The glasses were filled with very fine white sand and the frame, of course, turned over on a hinge so that the glasses could be reversed.

Saturday, July 23rd.—Had a carriage and drove to the Bernina Hospice. We had a very lovely view of the Morteratsch, Cambrena, and other glaciers. Clear and sharp they stood

out against a brilliant blue sky; the sun was very hot, but the breeze so cold it seemed to prevent one's feeling the heat much. We passed Lago Nero, a small, very dark-coloured lake, and close beside it Lago Bianco, a white, milky pool fed by the glacier just above it (the Cambrena)—a great contrast with the other lake in colour.³

I saw and tried to catch a lovely butterfly (the Camberwell Beauty), but he sailed away far out of reach. At the hospice the horse was put up, and we started on foot to make the ascent of the Alp Grüm, 7,600 feet above the level of the sea. It was a hard climb of an hour and a half, and then indeed we had a lovely view, looking down into a long vista of Italian valleys, with the Lake of Poschiavo in the distance. The mountains were of the softest purple with a very little blue haze—a scene one could not forget, so full of poetic beauty. A great number of saxifrages, some club moss, and one new butterfly made up the treasures of the day. At four o'clock the Rev. W. Ayre met about a dozen ladies in the salon to practise the chants and hymns for to-morrow. We sang •

for about an hour, and at five came the *table d'hôte*, at which we generally dine. It is very social; every one talks to his next neighbour, and the events of the day are discussed. Last night Mr. Ayre and a party went up the Piz Langard at twelve o'clock at night with lanterns until the moon rose, and then they went on by its light. They just reached the summit as the sun rose and had a splendid view—a really clear, fine sunrise with beautiful colours shone upon the snow and ice-peaks. They made some tea with a spirit-lamp, and so cold was it that some drops which were spilt froze on the rock immediately.

Sunday, July 24th.—We stayed at home all day and in the evening took a short walk towards the Roseg Glacier. The air was so sweet with flowers. We walked between great masses of granite rock with firs (either larches or the Alpine cedar) on either side, and whenever we strayed under the trees we walked upon carpets of the exquisite *Linnaea borealis*. It gives out a delicate perfume which is perceptible in the air; although it can scarcely be discerned when the flower is gathered. There is a remarkable absence of birds in the woods;

rooks, sparrows, chaffinches, swallows, titmice are frequent, but the only other kinds we have noticed are the Alpine crow, a bird with speckled breast and a good deal of white about the tail, and the stonechats flitting about the rocks.

Monday, July 25th. - Another bright, sunny day. A large party of us is to go to the Val del Fain, a famous place for butterflies and flowers. We started with four carriages full of visitors and had about an hour's drive uphill to the Bernina Inn. Our carriage held three, and Mr. Ayre came with us, and we heard a very interesting account of his tracing the wanderings of the Israelites, of his being lost for eight hours on Mount Sinai, his journey across the desert, &c.

With such conversation the time soon passed, and we found ourselves at the place where we were to alight and walk about a mile and a quarter up the Val del Fain. We made a picturesque procession, consisting of about nineteen people in Alpine costume with alpenstocks, several of whom had vasculums for the plants slung across their shoulders, the ladies with large hats covered with white •

tarlatan to keep the head cool and the gentlemen with long white veils tied round their hats.

We stopped by a large mass of grey rock, beside which a clear mountain stream ran down and from which we had a most lovely view of snowy peaks and glaciers. After a rather amusing lunch I made a hasty sketch



AS WE WENT TO THE VAL DEL FAÏN.

of the party as they were grouped by the rock, but as nearly everybody moved about it was rather difficult to make a picture of it. The young gentlemen were very assiduous in their efforts to supply all the party with provisions, handing the various things on thin slabs of granite and slate which they had washed in the stream, and opening bottles

with their alpenstocks, &c. Luncheon over, we all dispersed in small parties in different directions to search for butterflies or plants. The younger members of the party set off to climb the steep mountains in search of edelweiss and were soon out of sight.

We all enjoyed an hour or two spent in such air and such scenery. All round us in every direction we looked upon towering rocky mountains, and on one side a range of snow-peaks of great beauty. It did not seem quite like everyday life—more like a little glimpse of a dream, and being so bright it did not last long, for now we began to hear distant mutterings of thunder, the sky became overcast, and large drops began to fall. We were high up on the hills when the rain began, and had therefore a rather difficult descent.

Wednesday, July 27th.—People contrive to do with very little sleep here, for they seem to be up and at work soon after three in the morning; and as to the waiters, they are frequently up till twelve at night, for people start then to ascend the Piz Langard to see the sunrise—then the poor fellows have to be up by four to get early breakfasts for others who •

start for various excursions. It is well for them that the season lasts but a short time (little more than two months), or they could never stand it; and as to the cook, she must be a sort of salamander, for there are meals going on all day long—a dinner at one, five, and half-past seven, besides breakfast, luncheon, and tea at any hour you please. I have frequently had wakeful nights here, so am able to date the various sounds of early morning. At half-past three the church close by rings out a loud peal to tell the inhabitants it is time to get up; at a quarter to four all the cocks begin to crow; at four o'clock the swallows wake up and twitter affectionately to each other, and old Johann begins to groom the horses just below our window, rapping the currycomb against the stones every five minutes. Johann keeps on till we go to breakfast, soon after eight, and in the interval almost every imaginable noise is heard—tinkling bells, cracking whips, scraps of Romanisch, German, French, and English, people coming and going, luggage ditto—a lively state of things! However it was with heartfelt regret that we bade adieu to Pontre-

sina, the most pleasant place we ever stayed at. It rained all day, but we were in a comfortable closed carriage, and a pair of horses quite equal to their work took us slowly up the Albula Pass, so that, chatting, reading, and working (for I re-hemmed the bottom of my dress on the way!), the time soon passed and did not seem wearisome. At Ponte we passed over the river Inn, which gives its name to the Engadine (viz., Engiadina, or Valley of the Upper Inn), and then on through wild, desolate scenery, with high limestone mountains on one side and granite on the other, till we reached the highest point, marked by a cross, which is 7,680 feet above the sea-level. It is a scene of wildest desolation; hardly a green thing is to be seen; fragments of rock lie in confusion on all sides as though an earthquake had upheaved the ground and buried all traces of life. We were above the snow in some places and could have walked upon little glaciers formed by it here and there by the roadside. We stopped about half-past one at a village called Bergün, one of the most curious places we have seen. Here were good houses built in sundry odd fashions, the windows projecting

so as to look up and down the street, and almost every ordinary window was cased with ironwork called a grille. A woman at her spinning-wheel looked picturesque in a pretty old doorway. The doors are made very solidly and in all sorts of patterns. In the Swiss towns about here there are many paintings on the walls; the Virgin and Child, the Holy Family, St. George and the Dragon seem to be the favourite subjects. They are rudely drawn and highly coloured, and they seem to stand the weather pretty fairly. The house opposite the hotel we lunched at had a quaint inscription on a sort of shield on the front of the house, and we saw several others somewhat similar. All these towns have ample basins and flowing water, so that a great deal of culinary work is done in the street; the vegetables are washed there for the daily dinner; the family wash is taken to the pump instead of the water being brought indoors for the purpose, and whenever water is wanted the servant goes, kettle or saucepan in hand, and fills it.

The windows here are recessed about one and a half feet, showing the thickness of the

walls. At Pontresina they were the same, and the window was often about six inches square and not made to open, so one could imagine the want of ventilation within.

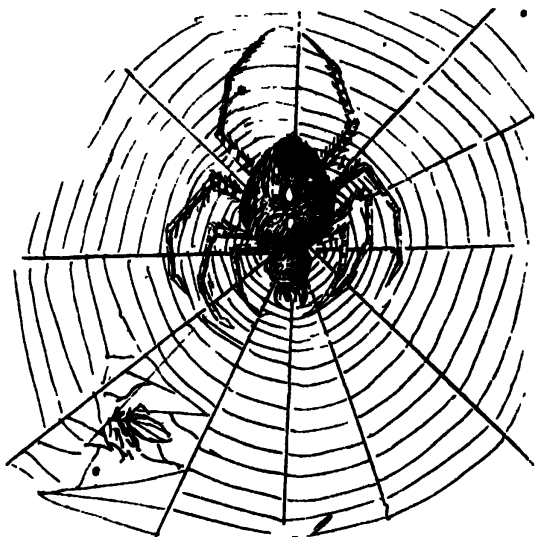
We went on from Bergün through very fine rocky scenery, but it rained so heavily we could see but little of it. The villages were very quaint, roughly built, and with a very unfinished look; the sheds are always built in one fashion—of logs crossing at the corners—and must be very lasting. Water is carried about by means of wooden troughs and made available for many purposes—grinding corn, sawing wood, &c. There is sure to be a mountain stream available, and a series of troughs will bring it wherever it is wanted. In our drive to-day we saw an eagle sitting in a field. He had fine large wings of brownish colour, which showed when he flew, but he was a long way off, so we could not tell his species. We reached the Hôtel Albula at Tiefenkasten at a quarter past seven, and had a pleasant greeting from the hostess. At eight o'clock we went up to the Catholic Church to hear the evening service. At the end of the service one of the monks took a brush, and,

dipping it in a pail held by a little boy, walked to the end of the church, vigorously sprinkling the congregation right and left, and then they dispersed. Close to the church is a sort of shed, full of skulls and bones which were taken out of the cemetery when it was closed. They were bleached nearly as white as ivory, being somewhat exposed to the weather, one end of the shed being open.

Thursday, July 28th.—These noisy glacier streams seem to contain excellent trout; we have them at all the hotels. They are the grey kind, and both they and the tench are generally well dressed and full of flavour.

I have seen some very handsome spiders. On the next page is the portrait of a very large one in the centre of his web, which was spun in a seemingly well-chosen corner. We went on from Tiefenkasten through steady rain all day, and stayed for our lunch at Churwalden. At a little inn there the host told us that the Schyn Pass was made as a military road, so that if the Swiss were ever attacked they could retire there and ten men could defend themselves against a hundred by throwing down stones from above. We asked him

about the winter, and he said the cold was very severe and the snow lasted almost nine months; still, the mails went every day on sledges to the Engadine, even when no trace



A SPIDER AT HOME.

of road was visible; the drivers left it entirely to the horses, and by their acute sense of smell they invariably kept the right track.

We reached Coire, and had an hour and a

half to spare, so we went to see the cathedral, which is very old and curious—Early Pointed Gothic in style, and dedicated to St. Lucius, an early British king, and the founder of St. Peter's Church, Cornhill! His bones and skull (the latter adorned with metal-work and embroidery) are preserved in the sacristy; also some fine old church plate, a monstrance (to contain the Host) of the fourteenth century, an old ivory crozier of the eleventh century, and, above all, a very lovely painting by Carlo Dolci on a piece of *lapis lazuli* (about half as large as this sheet)¹ of St. Peter trying to walk on the water and the Saviour raising him when sinking. The sea and sky were well suggested by the cloudy blue of the stone itself, only the figures and boat were painted, and they were exquisitely done. There was a queer figure carved just at the entrance to the chancel, very rudely done, with an awful expression on its stony face.

From Coire we went by five o'clock train to Ragatz, and took a room at the Hof Ragatz.

¹ Presuming "sheet" to mean leaf (as Mrs. Brightwen was writing in a bound blank book), the *lapis lazuli* was about 3½ inches in length and 6 inches in width.—ED.

The garden here is full of flowering plants and shrubs—althæas, pink and white, at least six feet high, with immense flowers covering the bush ; Virginian tobacco, eight feet high, with fine dark red flowers ; hemp, ten feet high ; very fine striped maize, cannas, pomegranates, zinnias, funkias, alstroemerias ; and, exceeding all else in brilliant colour and sweetness, two long borders of *Jalapa* [= *Mirabilis*], or marvel of Peru. The flowers of the last-named plants were nearly as large as *convolvulus major*, and of every colour and mixture of colour, except blue ; the plants were more than two feet high, and covered with blossom, so that the air was richly scented with their fragrance.

Vines seem to do well here ; there was a long trellised walk covered with them, on which the bunches of grapes hung thickly, and seemed to promise well for the autumn gathering. Oleanders are now in full bloom : all round the drive up to the hotel are tubs with pomegranates and oleanders alternately ; they give such brilliant colour to the scene that it would be a great gain to us if they would grow equally well in England.

In the evening we were told some Tyrolese,

singers were coming to give a concert, so at half-past eight we went to the salon and heard them. I wished I had been able to sketch those we heard at Pontresina, so this time I took



TYROLESE SINGERS.

my sketch-book and pencil, and here are their portraits. They sang very well, playing the guitar, zither, and a wooden instrument whose name I do not know.

Friday, July 29th.—Left Ragatz by train, a very hot, close-feeling day. The only first-class carriage we could travel in was inhabited by Germans—two ladies, one young and one old, and a gentleman. We found they had every window closed, and the heat was intolerable; so we put down two windows on our side; but the gentleman sprang up from the other side, and with great wrath shut up one of the windows with such energy that the glass nearly came out of its frame, but we quietly bore his discourtesy, and when we could bear the heat no longer we retreated through the centre door into the adjoining second-class carriage, and sat there the greater part of the way. The singular part of the affair was the fact that this gentleman had some kind of asthma for which one would have thought he would have been glad of fresh air. When we were near our station for alighting we returned to our carriage, and a few minutes after the glass of the said window broke to shivers with a great noise of its own accord, so then our friends pulled down the blind, as though resolved we should not have any fresh air. However, soon after a violent storm of rain came on, and the blind did not

keep it from raining upon the poor, crusty old lady, who had been looking angrily at us all the while. I got up and laid my waterproof cloak gently over her to protect her from the wet. She seemed surprised and-pleased, but would not use it, changing her seat instead. Then in came the guard, and looking at the window, quietly charged George with breaking it, and demanded $2\frac{1}{2}$ francs for the damage. Though we told him we had nothing to do with it, he remained unconvinced; but then the young lady turned our friend, and explained the whole thing in German, so the guard had nothing to say, and retreated, the wrath all melted away into kindness, and we parted good friends.

Saturday, July 30th.—Stayed the night at Zurich. We changed carriages, and had for our travelling companion Lady Herbert of Lea. She looked rather sad and out of health, but had a very pleasing, gentle expression. At one place we stopped for fifty minutes for refreshment. A good many soldiers were there, and it was amusing to see how one of them was petted by some of the common people, treated to any amount of drink, and an arm put round

his neck in the most absurd way. The newspapers say this sort of scene has been going on everywhere through France. We reached Neuchâtel at half-past eight.

Sunday, July 31st.---We walked up to the cathedral, which has been well restored since we were there before. It has a brightly-coloured roof (green, red, violet, and white tiles in patterns), and inside the figures of the Dukes of Burgundy are restored in colour. There is some beautiful old Norman bordering in the wall of the house which was the residence of the old Kings of Burgundy. The lightning was very vivid, and lasted far into the night.

Monday, August 1st.—Left Neuchâtel and had a very hot and trying day. Again we were victimised by a lady who would keep her window closely shut the whole day. We were turned out at Pontarlier for the examination of the luggage, but it was a mere form in this case, for none of our things were opened at all. We, however, were all made to go through a passage with a gendarme on each side, who looked intently at each person, and said to us, "*Anglais, passez.*" It was well we showed our nationality! I should not like to have been

a Prussian to fall into their clutches. We took our seats and went on. Now we rarely saw any one at work in the fields except women and children; all the men were gone to the war. We passed trains full of soldiers, and trucks following them with fine-looking horses. Both men and horses deeply excited one's pity; they may so soon be either suffering themselves or the cause of it to others. We reached Dijon at five, and stayed at the Hôtel des Cloches. Took a drive to the Park in the evening, and saw a brilliant glow-worm under the trees.

Tuesday, August 2nd.—Left Dijon at 11, and had another hot, dusty journey. These days of confinement in a railway carriage, even with all the windows open, are very hard to endure. I am more and more convinced the real pleasure of travelling is felt when it is all over, and one can think of the pleasant days and scenes, and try to forget the (to me) great discomforts of the way. We reached Paris at six in the evening—the Boulevards looked full of life as usual. We stayed at the Hôtel Bristol, in the Place Vendôme. In the evening there was another thunderstorm, the sixth we have had during the last three weeks. There is *un*

enfant terrible here; it cries and screams by the hour together. We heard it is one of Lady Peel's four children, who are all given to crying in this way. Sir Robert has a villa on the Lake of Geneva, where he goes every year, and he has his own steamer on the lake.

Wednesday, August 3rd.—Explored in various directions, making a few purchases. Took a carriage to Lefebvre's, to see if he had anything new in birds or animals. He lives a good way off on the other side of the Seine. We passed a great number of soldiers riding about in carriages, half-tipsy, shouting to each other as they passed, and singing. There are little French flags sold about the streets which the soldiers buy and put in their hats, like so many children. The Zouaves and African soldiers are fine-looking fellows; some of them are of the darkest bronze colour, like real Arabs. Their dress is very picturesque, and doubtless well fitted for service in a hot climate. It consists of a turban (either white or yellow), a loose sort of crimson jacket, and wide trousers.

Lefebvre (bird-stuffer to the Emperor) has removed from the Quay to 72, Rue de l'Abbé Groult—a street no one seemed to know, so we

had a long, jolting drive to find it out, and after going a great deal out of our way, we found his house. We went through a gateway adorned with the royal arms, into a garden, where Lefebvre was busy superintending the formation of a large deer's head in plaster, a process he afterwards explained to us. He is a fine-looking man, very like Thorwaldsen the sculptor, and wears the same sort of white blouse. He remembered George as the purchaser of some of his works at the Paris Exhibition, and showed his present stock of birds and animals; very pretty and cleverly mounted they were. We chose a group of woodcocks on an oval frame, lined with velvet. He now told us how large heads were mounted, and those tigers' and lions' heads which one sees on rugs. When the skin is taken off, the head is cleared of all the flesh, and a careful cast is made of it in plaster, and that is exactly reproduced in cork, and on the solid cork foundation the skin is carefully placed and dries upon it, and now it is both light and strong, so that if trodden upon there are no bones to get broken. I was presented with a fine pomegranate flower by the polite master of the garden, which contained both white and

scarlet pomegranates in flower ; the former are rare. We saw the queerest little owl in a cage and I fell so in love with its quaint expression that Lefebre very willingly allowed us to buy it. He said he had had it three years. It was caught in the woods near Paris, and now he informed it (as we waited while they fetched a cage), "You are going to England, my dear, and will see the world ; we are going to part with you ; goodbye, my dear !" at which the owl made its eyes into great round balls, as if fully to take in such alarming intelligence. We bade adieu to Monsieur Lefebre, and then I returned to finish my shopping in Paris, and George went for a drive round the Bois de Boulogne.

I packed up everything at night, ready for our start in the morning. I had but little sleep, for a cricket chirped loudly somewhere at the window, and perhaps he made the owl restless ; between the two I had a lively night !

Thursday, August 4th.—Our passage was not very smooth ; there was a head wind and some fog ; however, we kept on deck and did not suffer. We left Folkestone by the tidal train, caught the 7 o'clock from Euston, and so came.

home from Paris to our own door in eleven hours ! And now that our little journey is over and, mercifully protected from all the perils of the way, we have returned in health and safety, we can truly echo the psalmist's thanksgiving to Him who has thus blessed us in our going out and coming in—

“Bless the Lord, O my soul : and all that is within me, bless His holy name.

“Bless the Lord, O my soul, and forget not all His benefits.

“Who forgiveth all thine iniquities ; who healeth all thy diseases.

“Who redeemeth thy life from destruction ; who crowneth thee with lovingkindness and tender mercies.”

—PSA. ciii. 1-4.

“

MALE BLOSSOM OF SCOTCH FIR.



NEW SHOOT OF FIR-TREE WITH COVER OF
OLD DRYING EXPANSION OF
YOUNG LEAVES.



SOME ENTRIES IN A NATURALIST'S DIARY, 1896¹

May 21st.—I saw a small fir-tree to-day with new shoots coming out at the ends of the branches; they looked very curious because the cover of the bud remained on and kept the tender young leaves from expanding. I quite enjoyed pulling off the caps and releasing the leaves.

May 22nd.—The Scotch fir is now in flower and the male blossoms shed out a great deal of yellow dust called pollen, which is nice food for many kinds of bees and flies. I could not

¹ A few passages in this diary have been suppressed as being too similar to passages in Mrs. Brightwen's "Rambles with Nature Students." Among them is a note on cyclamen, dated August 12, 1896, in which she says, "The capsules of the Cyclamen are now opening." It is printed in the October section of the above-mentioned work. The drawings illustrating the diary are by Mrs. Brightwen.—ED.

reach the small cones, so I must draw them another day.

May 25th.—Laurel-leaves appear to have two or four little honey glands on the under side of the leaf, close to the stalk.

May 26th.—I have now found out the



EGGS, MAGGOT, CHRYSA LIS OF
BLUE-BOTTLE FLY.

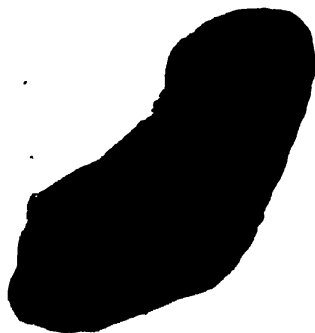


BLUE-BOTTLE FLY

different transformations of the common blue-bottle fly. First it lays dozens of very small white eggs on any dead bird or animal ; they hatch into a maggot with one end pointed and the other blunt ; it grows till it is full-

grown and turns into an oval chrysalis and out of that comes the blue-bottle fly.

May 27th.—Found some owl-pellets under a tree, one full of beetles' wing cases, one with the upper half of a rat's skull in it, and others with sparrows' heads and mouse bones, showing what the owl had fed upon. The chief sub-



OWL-PELLET.

stance of the pellet was made up of rat and mouse fur.

May 28th.—The squirrels are busy tearing off the soft inner lining of the bark of the lime-tree branches, of which they make their nests, or *dreys*. They are larger than an ordinary bird's nest and are placed on the outer branches.

of fir-trees; the nest is held together by small larch twigs, which, being rough and prickly, answer well for this purpose.

May 29th.—Saw a pair of young wild turtle-



SALLOW IN SEED.

doves sitting together on a branch high up in a fir-tree. They were close to the nest where they were hatched.

May 30th.—The common willow is now shedding its fluffy seeds into the air.

LIPHOOK,¹ HANTS, *June 15th.*—The cotton-



COTTON-GRASS.

grass is abundant here on boggy heaths. Each seed is furnished with forty or fifty long white

¹ A village in East Hants, eight miles north-east of Petersfield.—ED.

silky hairs which—when the flower head is ripe—bear the seed far away on the passing wind.

June 16th.—A click-beetle flew into the



CLICK-BEETLE. GRUB OF CLICK-BEETLE.
CALLED THE WIRE-WORM.



BEЕ-FLY.

carriage as we drove along ; it is the perfect form of the wire-worm, which is so destructive to the roots of grass and other plants and is the favourite food of rooks and starlings.

June 17th.—Caught a bee-fly. It is covered

with yellow down, hovers over the flowers with a loud humming noise exactly resembling a bee, but it has only two wings and belongs



DODDER ON HEATHER.

therefore to the Diptera. Bees having four wings are Hymenopterous.

LIPHOOK, *June 18th.*—This place abounds with insect life. A small golden-coloured

beetle flies about in the sun in crowds and eats rose-petals.

Found the chrysalis of another small beetle suspended on stalks of grass.

June 19th.—There are many kinds of ichneumon flies here; they may be known by their incessantly quivering antennæ and very slender bodies. They are ever on the watch

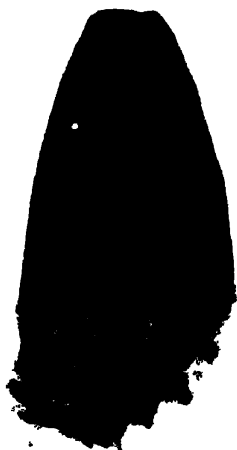


ICHNEUMON FLY.

to lay their eggs in some living caterpillar or chrysalis. When the egg hatches the ichneumon grub devours the inside of the caterpillar and goes on growing until it touches some vital part, when the caterpillar dies and the grub turns to a chrysalis and hatches out an ichneumon fly.

July 4th.—Found a cone of a conifer which

a squirrel had partly eaten. The dark purple outside and bright colours within are unlike any ordinary fir-cone.



CONE OF ABIES OR SILVER FIR.¹

August 13th.—The bright green fruits of *Thuja gigantea*² are being bitten off by the squirrels. The tree is very tapering and high,

¹ Possibly *Abies brachyphylla*.—ED.

² Presumably *Thuja* or *Thuja gigantea* of gardens, properly called *Libocedrus decurrens*, or Incense Cedar.

—ED.

and only bears fruits at the top, so I had never



FRUITS OF *LIBOCEDRUS DECURRENS*, OFTEN CALLED
THUYA GIGANTEA.

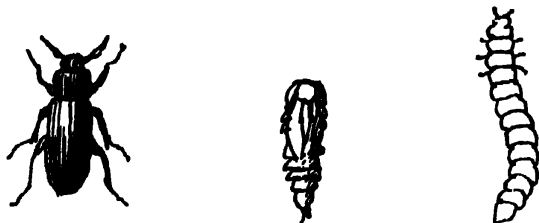


LIBOCEDRUS DECURRENS, OFTEN CALLED
THUYA GIGANTEA.

seen them before as they are not produced every

year, but only when the summer happens to be favourable.

August 14th.—Very few people seem to know the common mealworm, so much used for feeding soft-billed birds. They are to be bought from millers at 3s. 6d. a 1,000, and are the larvæ of the beetles (*Tenebrio molitor* and



TENEBRIO MOLITOR, WHOSE LARVÆ ARE MEALWORMS.

Tenebrio obscurus) which breed abundantly in corn-mills and bakehouses.

August 15th.—The seeds of tamarinds taken out of the jam will grow readily, either in a frame or kept well-watered by the side of a fire or hall stove. The young seedlings have light and graceful foliage, and it is very interesting to watch the pinnate leaves folding closely together for their nightly sleep.

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¹ Anderida is the Roman city which was the Andreds-Œaster or Andredcester of the Britons. In all probability Pevensey stands on the site of it. "The great forest of Anderida" is a phrase signifying the Andredes-weald or forest of Andred, also called Andredes-Wald or Andred's Wald. The Britons called this forest Coit Andred. Andredes-weald is said to mean "uninhabited district."—F.D.

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